Department of Design and Construction

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

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

VOLUME 1 OF 3

BID BOOKLET

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION
PREPARED BY DEWBERRY ENGINEERS INC.

DECEMBER 4, 2016

17-074

*Revised on 05/22/2017

Bid Tab – REVISED*

Description	**NEW 20" SUB-AQUEOUS WATER MAIN TO CITY ISLAND - BOROUGH OF THE BRONX**		
Bid Date	**03/03/2017**	**FMS ID**	**HED-564**
Estimated Cost	**$21,297,320.50***	**Client Agency**	**DEP**
Bid Security	**Not less than 2% of Total Bid Price**	**PLA**	**No**
Time Allowed	**915 CCD***	**Federal Funded:**	**No**
Addendum	**3**	**Contract Manager**	**Nilofer Barkatullah**
PIN	**8502017WM0014C**	**Project Manager**	**A.H.M. Choudhury**
Selective Bidding	**☐Yes ☒No**	**E-PIN**	**85017B0068**

Bid Rank	Vendor	Bid Amount	Security Type
1	NORTHEAST REMSCO CONSTRUCTION, INC	$26,294,396.50*	Bond
2	JR CRUZ CORP	$29,965,911.77*	Bond
3	PERFETTO CONTRACTING CO. INC.	$43,028,035.00*	Bond

Recorder: Brenda Barreiro Ext. 1041 **Approver** Lorraine Holley

Department of Design and Construction

Ana Barrio
Acting Commissioner

Justin Walter
Chief Administrative Officer
Administration

Charlette Hamamgian, Esq.
Agency Chief
Contracting Officer

Lorraine Holley
Deputy ACCO
Competitive Sealed
Bid Contracts

November 02, 2017

CERTIFIED MAIL - RETURN RECEIPT REQUEST
NORTHEAST REMSCO CONSTRUCTION, INC
1433 Route 34 South, Building B-Suite B1
Farmingdale, NJ 07727

RE: FMS ID: HED-564
E-PIN: 85017B0068001
DDC PIN: 8502017WM0014C
NEW 20" SUB-AQUEOUS WATER MAIN TO CITY ISLAND-BOROUGH OF THE BRONX
NOTICE OF AWARD

Dear Contractor:

You are hereby awarded the above referenced contract based upon your bid in the amount of $26,294,396.50 submitted at the bid opening on March 03, 2017. Within ten (10) days of your receipt of this notice of award, you are required to take the actions set forth in Paragraphs (1) through (3) below. For your convenience, attached please find a copy of Schedule A of the General Conditions to the Contract, which sets forth the types and amounts of insurance coverage required for this contract.

(1) Execute two copies of the Agreement in the Contracts Unit, 30-30 Thomson Avenue, 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 two properly executed performance and payment bonds. If required for this contract, copies of performance and payment bonds are attached.

(3) Submit to the Contracts Unit the following insurance documentation: (a) original certificate of insurance for general liability in the amount required by Schedule A, and (b) original certificates of insurance or other proof of coverage for workers' compensation and disability benefits, as required by New York State Law. The insurance documentation specified in this paragraph is required for registration of the contract with the Comptroller's Office.

NYC DDC **Department of Design and Construction**

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,

Michael Shipman
Director of Contracts

30 - 30 Thomson Ave L.I.C., NY 11101 Telephone: (718) 391-2838 Facsimile: (718) 391-1885 www.nyc.gov/buildnyc

Notices to Bidders

Pre-Bid Questions (PBQs)

Please be advised that PBQs should be submitted to the Agency Contact Person at least five (5) business days (by 5:00 PM EST) prior to the bid opening date as indicated in ATTACHMENT 1 - BID INFORMATION, page A-1 and SCHEDULE B, page 13, VOLUME 1 OF 3 of this BID BOOKLET.

Apprenticeship Program

If Apprenticeship Program is required as noted on Page 19 of this BID BOOKLET, the following notice applies:

Please be advised that, pursuant to the authority granted to the City under Labor Law §816-b, the New York City Department of Design and Construction hereby requires that the contractor awarded a contract as a result of this solicitation, and any of its subcontractors with subcontracts worth two million dollars or over, have, prior to entering into such contract or subcontract, apprenticeship agreements appropriate for the type and scope of work to be performed that have been registered with, and approved by, the New York State Commissioner of Labor. In addition, the contractor and its subcontractors will be required to show that such apprenticeship program/s have successfully passed the two year Probation period following the initial registration date of such program/s with the New York State Department of Labor.

The failure to prove, upon request, that these requirements have been met shall result in the contract not being awarded to the contractor or the subcontractor not being approved.

Please be further advised that, pursuant to Labor Law §220, the allowable ratio of apprentices to journeypersons in any craft classification shall not be greater than the ratio permitted to the contractor as to its workforce on any job under the registered apprenticeship program.

Notices to Bidders

Compliance with HireNYC and Reporting Requirements

The Hiring and Employment Rider shall apply to contracts valued at $1 million or more for all goods, services and construction except human services contracts that are subject to the Public Assistance Hiring Commitment Rider. The Rider describes the Hire NYC process and obligations, including reporting requirements throughout the life of the contract. The Hire NYC process requires contractors to enroll with the Hire NYC system within thirty days after the registration of the contract subject to this solicitation, to provide information regarding all entry to mid-level job opportunities arising from this contract and located in New York City, and to agree to interview qualified candidates from HireNYC for those opportunities. The Rider also includes reporting requirements unrelated to HireNYC.

NYC Construction Loan Pilot Program

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.

CITY OF NEW YORK

DEPARTMENT OF DESIGN AND CONSTRUCTION DIVISION OF INFRASTRUCTURE

BID BOOKLET

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto

BOROUGH OF THE BRONX
CITY OF NEW YORK

(NO TEXT ON THIS PAGE)

PROJECT ID: HED564

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

BID BOOKLET

TABLE OF CONTENTS

SECTION		PAGE
PART A		
1.	Table of Contents	1
2.	Special Notice to Bidders	2
3.	Attachment 1 – Bid Information	A-1
4.	Bid Schedule	B-1
5.	Bid Form	C-1
6.	Affirmation	C-6
7.	Bid Bond	C-7
8.	M/WBE Program: M/WBE Utilization Plan	5
9.	Apprenticeship Program Requirements	19
PART B		
10.	Safety Questionnaire	22
11.	Pre-award Process	25
12.	Project Reference Form	27
13.	Contract Certificate	30
14.	Vendex Compliance	31
15.	Iran Divestment Act Compliance Rider	32
16.	Construction Employment Report	34

(NO TEXT ON THIS PAGE)

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

SPECIAL NOTICE TO BIDDERS

BID SUBMISSION REQUIREMENTS

THE FOLLOWING DOCUMENTS ARE TO BE COMPLETED AND SUBMITTED WITH THE BID:

1. Bid Schedule and Bid Form, including Affirmation
2. Bid Security (if required, see Attachment 1 on Page A-1)
3. Schedule B: M/WBE Utilization Plan (if participation goals have been established)

FAILURE TO SUBMIT ITEMS (1), (2) AND (3) WILL RESULT IN THE DISQUALIFICATION OF THE BID.

4. Safety Questionnaire
5. Construction Employment Report (if bid is $1,000,000 or more)
6. Contract Certificate (if bid is less than $1,000,000)
7. Confirmation of Vendex Compliance
8. Bidder's Certification of Compliance with Iran Divestment Act
9. Special Experience Requirements (if applicable)
10. Apprenticeship Program Questionnaire (if applicable)
11. Any addenda issued prior to the receipt of bids

FAILURE TO SUBMIT ITEMS (4) THROUGH (11) MAY RESULT IN THE DISQUALIFICATION OF THE BID.

NOTES:

(1) All of the above referred to blank forms to be completed and submitted with the bid are included in the BID BOOKLET.

(2) If the bidder has any questions or requires additional information, please contact the Department of Design and Construction by phone (718-391- 2601) or by fax (718-391-2615).

(3) VENDEX QUESTIONNAIRES: The Bidder is advised that Vendex Questionnaires and procedures have been changed. 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, 3a, 3b, and 4 of this Bid Booklet.

SPECIAL NOTICE TO BIDDERS

SPECIAL EXPERIENCE REQUIREMENTS (Revised 03/2014)

(A) **SPECIAL EXPERIENCE REQUIREMENTS FOR THE BIDDER:** The Special Experience Requirements set forth below apply to the bidder. Compliance with such Special Experience Requirements will be determined solely by the City prior to an award of contract. Failure to comply with the Special Experience Requirements will result in rejection of the bid as non-responsive.

The requirements in this Section (A) apply to this contract where indicated by a blackened box (■).

■ The bidder must, within the last seven (7) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least one (1) project similar in scope and type to the required work. Such prior project may have been performed as a prime contractor, subcontractor or sub-subcontractor.

The Special Experience Requirements next to the blackened box below apply to the bidder. If the bidder intends to perform such work itself, it must demonstrate compliance with the Special Experience Requirements. If the bidder intends to subcontract this work, the proposed subcontractor or sub-subcontractor must demonstrate compliance with the Special Experience Requirements. The contractor, subcontractor or sub-subcontractor (hereinafter referred to as the "entity") that will perform any specific area of work indicated by the blackened box below, may have performed the required prior project(s) as a prime contractor, subcontractor or sub-subcontractor. Once approved, no substitution will be permitted, unless the qualifications of the proposed replacement have been approved in writing in advance by the City.

☐ **Trunk Water Main Work:** The entity that will perform the trunk water main work must, within the last seven (7) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least one (1) project similar in scope and type to the required work.

☐ **Best Management Practice Work:** Best Management Practice ("BMP") Work is any item of work in the Bid Schedule that begins with the prefix "BMP". The entity that will perform any BMP Work 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.

For professional services in connection with BMP Work, (i.e., monitoring and reporting services), the individual who will perform the required services 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. Additional requirements are set forth below.

☐ The individual serving as the Restoration Specialist (Construction Monitor) must be a Registered Landscape Architect licensed by the state of New York, or must have equivalent professional experience.

☐ The individual serving as the Erosion and Sediment Control Licensed/Certified Professional must be a Certified Professional in Erosion and Sediment Control (CPESC), certified by CPESC, Inc.

☐ **Micro-Tunneling/Pipe Jacking Work:** The entity that will perform the micro-tunneling/pipe jacking work must, within the last five (5) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least two (2) projects similar in scope and type to the required work.

☐ **OTHER:** _____

_____

(B) SPECIAL EXPERIENCE REQUIREMENTS FOR SPECIFIC AREAS OF WORK (to be provided after an award of contract):

The requirements in this Section (B) apply to this contract where indicated by a blackened box (■).

The Special Experience Requirements set forth below apply to the contractor, subcontractor or sub-subcontractor that will perform the specific area of work. **Compliance with such Special Experience Requirements will be determined solely by the City after an award of contract.** After an award of contract, when requested by the City, the contractor will be required to submit the qualifications of the contractor, subcontractor or sub-subcontractor that will perform the specific area of work. If the bidder intends to perform such work itself, it must demonstrate compliance with the Special Experience Requirements. If the bidder intends to subcontract this work, the proposed subcontractor or sub-subcontractor 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.

Special Experience Requirements apply to the contractor, subcontractor or sub-subcontractor (hereinafter referred to as the "entity") that will perform any specific area of work indicated by a blackened box. The entity may have performed the required prior project(s) as a prime contractor, subcontractor or sub-subcontractor.

☐ **Hazmat Work:** Hazmat Work is any item of work in the Bid Schedule that begins with the prefix 8.01. The entity that will perform any Hazmat Work must, within the last three (3) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least five (5) projects similar in scope and type to the required work.

☐ **Pile, CFA Pile, and/or Mini-Pile Work:** The entity that will perform the Pile, CFA Pile and/or Mini-Pile Work must, within the last three (3) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least two (2) projects similar in scope and type to the required work.

For professional services in connection with Pile Work, (i.e., engineering and inspection services), the individual who will perform the required services must be a Professional Engineer licensed by the state of New York. Such individual must also comply with the above requirements for prior projects.

☐ **Construction Report, Monitoring And Post-Construction Report, and Continuous Real-Time Monitoring For Vibrations And Movements And Post-Construction Report Work:** The entity that will perform the Construction Report, Monitoring For Vibrations And Movements, and Post-Construction Report Work must, within the last three (3) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least two (2) projects similar in scope and type to the required work.

For professional services in connection with Reporting and Monitoring Work, (i.e., engineering and inspection services), the individual who will perform the required services must be a Professional Engineer licensed by the state of New York. Such individual must also comply with the above requirements for prior projects.

■ **OTHER: Horizontal Directional Drilling:** The horizontal directional drilling Contractor or subcontractor performing the work required under this contract must have successfully self-performed at least five (5) horizontal directional drilling projects to install product pipe of a similar nominal diameter and length to the proposed project within the past two years. The Engineer shall have sole authority to determine the adequacy of representative projects. One of the successfully completed projects shall have been in similar ground conditions (strata type and hydrostatic head), as to those anticipated on this contract.

(C) **SPECIFICATIONS:** In the event of any conflict, omission or inconsistency between (1) the Specifications and/or Contract Drawings, and (2) the Special Experience Requirements in Section (B) of the Special Notice To Bidders, the special experience listed in the Specifications and/or Contract Drawings shall be controlling. The Special Experience Requirements in Section (B) of this Special Notice To Bidders are only for the convenience of the bidders.

(D) **SUBMISSION REQUIREMENTS:** For each project submitted to demonstrate compliance with the Special Experience Requirements, the bidder must complete and submit 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.

If Special Experience Requirements are indicated for any specific area of work, the submission requirement set forth above shall apply to the entity that will perform the specific area of work.

(E) **CONDITIONS**: In determining compliance with the Special Experience Requirements for the bidder set forth above, the City may 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 (6) months or more from the inception of 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.

(F) **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.

Qualification Form

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: NORTHEAST RENSCO CONSTRUCTION, INC.

Name of Project: WASTEWATER FORCE MAIN

Location of Project: MIDDLETOWN & CROMWELL, CT

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

Name: CITY OF MIDDLETOWN; PRIME AE, ARTHUR CHOQUETTE, P.E.
Title: PROJECT ENGINEER Phone Number: 860-436-5600

Brief description of the Project completed or the Project in progress: SEE ATTACHED "PROJECT SUMMARY, NO. 10405"

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: PRIME

Amount of Contract, Subcontract or Sub-subcontract: $15,606,169.16

Start Date and Completion Date: APR 2016

****

Name of Contractor: NORTHEAST RENSCO CONSTRUCTION, INC.

Name of Project: 24" WATER MAIN REPLACEMENT

Location of Project: MIDDLESEX CNTY – PERTH AMBOY / SAYREVILLE, NJ

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

Name: MIDDLESEX WATER COMPANY, DAVID TANZI, P.E.
Title: PROJECT ENGINEER Phone Number: 732-225-7000

Brief description of the Project completed or the Project in progress: SEE ATTACHED "PROJECT SUMMARY, NO. 10145"

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: PRIME

Amount of Contract, Subcontract or Sub-subcontract: $4,473,250.00

Start Date and Completion Date: JUN 2010

Qualification Form

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: T. A. SHEETS

Name of Project: WILLIAMSBURG INTERCEPTOR FORCE MAIN PROJECT

Location of Project: WILLIAMSBURG, VIRGINIA

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

Name: AECOM - GARY HEISLER P.E.
Title: PROJECT DIRECTOR Phone Number: 757-306-6842

Brief description of the Project completed or the Project in progress: 1 DRILL TOTALING 2,116 LF OF 44-INCH HDPE PIPE IN A VERY SOFT FORMATION

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: SUB-CONTRACTOR

Amount of Contract, Subcontract or Sub-subcontract: $1,265,999.00

Start Date and Completion Date: 5-4-16 TO 6-23-16

****

Name of Contractor: GARNEY COMPANIES

Name of Project: KAW WATER TREATMENT PLANT-PHASE I

Location of Project: LAWRENCE, KANSAS

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

Name: BURNS & McDONNEL - JEFF HEIDRICK P.E.
Title: PROJECT MANAGER Phone Number: 816-333-9400

Brief description of the Project completed or the Project in progress: 1 DRILL TOTALING 2,405 LF OF 36-INCH PVC PIPE IN A LIMESTONE FORMATION

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: SUB-CONTRACTOR

Amount of Contract, Subcontract or Sub-subcontract: $2,498,533.00

Start Date and Completion Date: 3-17-14 TO 7-8-14

Qualification Form

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: T.A. SHEETS

Name of Project: SUFFOLK WATER TRANSMISSION MAIN - PHASE I

Location of Project: SUFFOLK COUNTY, VIRGINIA

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

Name: MICHAEL BAKER JR., INC. - JEFF GIDLEY P.E.
Title: PROJECT MANAGER Phone Number: 757-463-8770

Brief description of the Project completed or the Project in progress: 1 DRILL TOTALING 2,245 LF OF 36-INCH STEEL IN A VARIABLE FORMATION

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: SUB-CONTRACTOR

Amount of Contract, Subcontract or Sub-subcontract: #832,000.00

Start Date and Completion Date: 5-29-13 TO 6-29-13

****

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 the Project completed or the Project in progress: _____

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: _____

Amount of Contract, Subcontract or Sub-subcontract: _____

Start Date and Completion Date: _____

ATTACHMENT 1 - BID INFORMATION

PROJECT ID: HED564
PIN: 8502017WM0014C

Description and Location of Work:

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

Documents Available At: 30-30 Thomson Avenue
First Floor Bid Procurement Room
Long Island City, New York 11101
8:30 A.M. to 4:00 P.M. – Monday through Friday

Submission of Bids To: 30-30 Thomson Avenue
First Floor Bid Procurement Room
Long Island City, New York 11101
Before 11:00 A.M. on **March 3, 2017**

Bid Opening: 30-30 Thomson Avenue
First Floor Bid Procurement Room
Long Island City, New York 11101

Time and Date: 11:00 A.M. on **March 3, 2017**

Pre-Bid Conference:

Yes	_____	No	X
If Yes, Mandatory	_____	Optional:	_____
Time and Date:	_____		
Location:	_____		

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

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

Performance and Payment Security: Required for contracts in the amount of $1,000,000 or more. Performance Security and Payment Security shall each be in an amount equal to 30% of the Contract Price.

Agency Contact Person: Lorraine Holley
Phone: 718-391-2601 FAX: 718-391-2627

(NO TEXT ON THIS PAGE)

HED564 - LIST OF CONTRACT DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	INDEX OF DRAWING AND KEY MAP
3	LEGEND
4	GENERAL NOTES AND LIST OF STANDARD DRAWINGS
5	SURVEY CONTROL PLAN
6	NEW 20" WATER MAIN - HORIZONTAL AND VERTICAL ALIGNMENTS
7	NEW 20" WATER MAIN PLAN AND PROFILE - SHEET 1 OF 4
8	NEW 20" WATER MAIN PLAN AND PROFILE - SHEET 2 OF 4
9	NEW 20" WATER MAIN PLAN AND PROFILE - SHEET 3 OF 4
10	NEW 20" WATER MAIN PLAN AND PROFILE - SHEET 4 OF 4
11	OUTFALL, SEWER PROFILES AND DETAILS
12	TREE INVENTORY AND MITIGATION PLAN - SHEET 1 OF 2
13	TREE INVENTORY AND MITIGATION PLAN - SHEET 2 OF 2
14	MAINTENANCE AND PROTECTION OF TRAFFIC - GENERAL NOTES AND CONSTRUCTION SEQUENCE - I
15	MAINTENANCE AND PROTECTION OF TRAFFIC - GENERAL NOTES AND CONSTRUCTION SEQUENCE - II, LEGEND AND NOTES AND TEMPORARY STORAGE AREA
16	MAINTENANCE AND PROTECTION OF TRAFFIC - INSTALLATION OF WATER MAIN, SEWER AND CATCH BASIN - DETAILS
17	MAINTENANCE AND PROTECTION OF TRAFFIC - CONSTRUCTION OF CURB AND SIDEWALK, AND ROADWAY PAVEMENT - DETAILS
18	SOUNDINGS
19	EROSION AND SEDIMENT CONTROL PLAN - PELHAM BAY PARK SIDE
20	EROSION AND SEDIMENT CONTROL PLAN -CITY ISLAND AVENUE SIDE
21	FINAL SITE PLAN - PELHAM BAY PARK SIDE
22	FINAL SITE PLAN - CITY ISLAND AVENUE SIDE
23 – 26	BORINGS

(NO TEXT ON THIS PAGE)

BID SCHEDULE

The following pages contain the Bid Schedule. Items listed in the Bid Schedule shall comply with the requirements of the corresponding sections of the specifications detailed in the table below. All references to the Standard Specifications, Details, Standards, and Drawings shall be to the version in effect at the time of bid.

NOTES:

- "XXX" in the table below signifies any possible combination of characters and spaces.
- The table below may contain item formats which are not included in the Bid Schedule.
- ***Please refer to the Bid Schedule to determine which specifications apply.***

Item Number Format	Applicable Specifications
4.XXX 6.XXX 7.XXX 8.XXX *(Except 8.01 XXX; see below)* 9.XXX	NYC Department of Transportation ("DOT") Standard Highway Specifications, as amended in the R-Pages, located in Volume 3 of 3 herein; ***AND*** NYC DOT Standard Details of Construction; ***OR,*** ***if the item is not contained within the Standard Specifications***, then see the applicable New Sections in the I-Pages, located in Volume 3 of 3 herein.
1.XXX 50.XXX through 55.XXX 60.XXX through 66.XXX 70.XXX through 79.XXX *(Except 79.11XXX; see below)* DSS XXX DSW XXX	NYC Department of Environmental Protection ("DEP") Standard Sewer and Water Main Specifications, as amended in the R-Pages and SW-Pages, located in Volume 3 of 3 herein; ***AND*** NYC DOT Specifications for Trunk Main Work; ***AND*** NYC DOT Sewer Design Standards; ***AND*** NYC DOT Water Main Standard Drawings; ***OR,*** ***if the item is not contained within the Standard Specifications,*** then see the Amendments to the Standard Sewer and Water Main Specifications in the SW-Pages, located in Volume 3 of 3 herein.
GI-XXX PM-XXX ROW XXX	New Sections in the I-Pages, located in Volume 3 of 3 herein ***AND*** NYC DEP Standards for Green Infrastructure.
UTL-XXX	Gas Cost Sharing Standard Specifications in the EP7-Pages, located in Volume 3 of 3 herein.

BID SCHEDULE

Item Number Format	Applicable Specifications
83X.XXX HW-XXX MX.XXX MP XXX NYC-XXX NYCT-XXX NYPD-XXX P XXX PK-XXX	New Sections in the I-Pages, located in Volume 3 of 3 herein.
BMP-XXX	Specifications for Construction of Best Management Practice (BMP) and Mitigation Area in the BMP-Pages, located in Volume 3 of 3 herein.
E XXX ME XXX	Specifications for the Specialty Electrical Works in the EL-Pages, located in Volume 3 of 3 herein.
SL-XXX	NYC DOT Division of Street Lighting Specifications ***AND*** NYC Division of Street Lighting Standard Drawings.
T-XXX	NYC DOT Specifications for Traffic Signals and Intelligent Transportation Systems ***AND*** NYC DOT Traffic Signal Standard Drawings.
JB XXX	Joint Bid Specifications in the JB-Pages, located in Volume 3 of 3 herein.
8.01 XXX	Specifications for Handling, Transportation and Disposal of Nonhazardous and Potentially Hazardous Contaminated Materials in the HAZ-Pages, located in Volume 3 of 3 herein.
67.XXX	Specifications for Abatement of Coal Tar Wrap Asbestos Containing Materials in the ASB-Pages, located in Volume 3 of 3 herein.
79.11XXX	Specifications for Abatement of Transit Authority Duct Insulation Asbestos Containing Materials in the ASB-Pages, located in Volume 3 of 3 herein.

(NO FURTHER TEXT ON THIS PAGE)

BID SCHEDULE

NOTE: (1) The Agency may reject a bid if it contains unbalanced bid prices. An unbalanced bid is considered to be one containing lump sum or unit items which do not reflect reasonable actual costs plus a reasonable proportionate share of the Bidder's anticipated profit, overhead costs, and other indirect costs, anticipated for the performance of the items in question.

(2) The following bid prices on Unit Price Contracts are to be paid for the actual quantities of the item numbers in the completed work or structure, and they cover the cost of all work, labor, material, tools, plant and appliances of every description necessary to complete the entire work, as specified, and the removal of all debris, temporary work and appliances.

(3) PLEASE BE SURE A LEGIBLE BID IS ENTERED, IN INK, FOR EACH ITEM.
Alterations must be initialed in ink by the bidder.

(4) The Extended Amount entered in Column 6 shall be the product of the Estimated Quantity in Column 3 times the Unit Price Bid in Column 5.

(5) Prospective bidders must examine the Bid Schedule carefully and, before bidding, must advise the Commissioner, in writing, if any pages are missing, and must request that such missing pages be furnished them. The pages of this Bid Schedule are numbered consecutively, as follows:
B - 3 [REVISION # 1] Through B - 28 [REVISION # 1]

PLEASE BE SURE A LEGIBLE BID IS ENTERED FOR EACH ITEM.
THE BIDDER SHALL INSERT THE TOTAL BID PRICE IN
THE BID FORM ON PAGE C-4 OF THIS BID BOOKLET.

Department of Design and Construction

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE - BUREAU OF DESIGN

PROJECT ID: HED564
CONTRACT PIN: 8502017WM0014C

2/27/2017 10:08 AM

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
001	4.02 AB-R ASPHALTIC CONCRETE WEARING COURSE, 1-1/2" THICK	1,350.00	S.Y.	20	00	27,000	00
002	4.02 AF-R ASPHALTIC CONCRETE WEARING COURSE, 2" THICK	700.00	S.Y.	60	00	42,000	00
003	4.02 CA BINDER MIXTURE	825.00	TONS	165	00	136,125	00
004	4.04 H CONCRETE BASE FOR PAVEMENT, VARIABLE THICKNESS FOR TRENCH RESTORATION, (HIGH-EARLY STRENGTH)	215.00	C.Y.	225	00	48,375	00
005	4.08 AA CONCRETE CURB (18" DEEP)	450.00	L.F.	35	00	15,750	00
006	4.13 AAS 4" CONCRETE SIDEWALK (UNPIGMENTED)	3,250.00	S.F.	10	00	32,500	00

Northeast Remsco Construction, Inc.

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
007	**4.13 BAS** 7" CONCRETE SIDEWALK (UNPIGMENTED)	350.00	S.F.	15	00	5,250	00
008	**4.16 AA** TREES REMOVED (4" TO UNDER 12" CALIPER)	48.00	EACH	340	00	16,320	00
009	**4.16 AB** TREES REMOVED (12" TO UNDER 18" CALIPER)	3.00	EACH	750	00	2,250	00
010	**4.16 AC** TREES REMOVED (18" TO UNDER 24" CALIPER)	2.00	EACH	1,000	00	2,000	00
011	**4.16 AD** TREES REMOVED (24" CALIPER AND OVER)	2.00	EACH	1,900	00	3,800	00
012	**4.16 BA** TREES PLANTED, 2-1/2" TO 3" CALIPER, ALL TYPES	135.00	EACH	1,200	00	162,000	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
013	4.18 A MAINTENANCE TREE PRUNING (UNDER 12" CAL.)	15.00	EACH	125	00	1,875	00
014	4.18 B MAINTENANCE TREE PRUNING (12" TO UNDER 18" CAL.)	20.00	EACH	175	00	3,500	00
015	4.18 C MAINTENANCE TREE PRUNING (18" TO UNDER 24" CAL.)	10.00	EACH	250	00	2,500	00
016	4.18 D MAINTENANCE TREE PRUNING (24" CAL. AND OVER)	10.00	EACH	400	00	4,000	00
017	4.20 SEEDING	4,000.00	S.Y.	3	00	12,000	00
018	4.21 TREE CONSULTANT	750.00	P/HR	75	00	56,250	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	COL. 5 CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	COL. 6 CTS
019	**50.21M3C024D** 24" R.C.P. CLASS III STORM SEWER, ON CONCRETE CRADLE	20.00	L.F.	500	00	10,000	00
020	**50.21M3E024D** 24" R.C.P. CLASS III STORM SEWER, ENCASED IN CONCRETE	16.00	L.F.	500	00	8,000	00
021	**50.31MC12** 12" E.S.V.P. STORM SEWER, ON CONCRETE CRADLE	31.00	L.F.	300	00	9,300	00
022	**50.31MC18** 18" E.S.V.P. STORM SEWER, ON CONCRETE CRADLE	25.00	L.F.	350	00	8750	00
023	**51.11P004** STANDARD 4'-0" DIAMETER PRECAST MANHOLE	3.00	EACH	6,500	00	19,500	00
024	**51.11P006** STANDARD 6'-0" DIAMETER PRECAST MANHOLE	1.00	EACH	13,000	00	13,000	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	COL. 5 CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	COL. 6 CTS
025	51.41S001 STANDARD CATCH BASIN, TYPE 1	4.00	EACH	7,500	00	30,000	00
026	51.61F000 OUTFALL	1.00	EACH	10,000	00	10,000	00
027	52.11D12 12" DUCTILE IRON PIPE BASIN CONNECTION	80.00	L.F.	300	00	24,000	00
028	53.11DR TELEVISION INSPECTION AND DIGITAL AUDIO-VISUAL RECORDING OF SEWERS	150.00	L.F.	15	00	2,250	00
029	6.01 AC CLEARING AND GRUBBING	3,500.00	S.Y.	8	00	28,000	00
030	6.02 AAN UNCLASSIFIED EXCAVATION	600.00	C.Y.	75	00	45,000	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
031	6.02 PA PNEUMATIC EXCAVATION AROUND TREES	10.00	C.Y.	300	00	3,000	00
032	6.25 RS TEMPORARY SIGNS	850.00	S.F.	10	00	8,500	00
033	6.26 TIMBER CURB	700.00	L.F.	3	00	2,100	00
034	6.28 AA LIGHTED TIMBER BARRICADES	150.00	L.F.	15	00	2,250	00
035	6.30 AA BEAM TYPE GUIDE RAIL	400.00	L.F.	70	00	28,000	00
036	6.30 AR REMOVE EXISTING GUIDE RAIL	400.00	L.F.	20	00	8,000	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	COL. 5 CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	COL. 6 CTS
037	6.34 AB CHAIN LINK FENCE, 4'-0" HIGH	50.00	L.F.	60	00	3,000	00
038	6.34 BD CHAIN LINK FENCE GATE FOR 8'-0" HIGH FENCE	200.00	L.F.	45	00	9,000	00
039	6.34 X REMOVE AND DISPOSE OF EXISTING CHAIN LINK FENCE	250.00	L.F.	10	00	2,500	00
040	6.40 D ENGINEER'S FIELD OFFICE (TYPE D)	36.00	MONTH	5,000	00	180,000	00
041	6.44 THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS (4" WIDE)	4,000.00	L.F.	1	50	6,000	00
042	6.49 TEMPORARY PAVEMENT MARKINGS (4" WIDE)	1,600.00	L.F.	1	00	1,600	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
043	6.53 REMOVE EXISTING LANE MARKINGS (4" WIDE)	3,000.00	L.F.	1	00	3,000	00
044	6.68 PLASTIC FILTER FABRIC	115.00	S.Y.	1	00	115	00
045	6.84 B LOLLIPOP TYPE BUS STOP SIGNS PRICE BID SHALL BE FOR THE FIXED SUM OF $ 5,000.00	1.00	F.S.	5,000	00	$5,000	00
046	6.87 PLASTIC BARRELS	870.00	EACH	10	00	8,700	00
047	60.11R520 FURNISHING AND DELIVERING 20-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 55)	910.00	L.F.	150	00	136,500	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	COL. 5 CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	COL. 6 CTS
048	60.11R524 FURNISHING AND DELIVERING 24-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 55)	80.00	L.F.	200	00	16,000	00
049	60.11R606 FURNISHING AND DELIVERING 6-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	185.00	L.F.	36	00	6,660	00
050	60.11R608 FURNISHING AND DELIVERING 8-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	50.00	L.F.	48	00	2,400	00
051	60.11R610 FURNISHING AND DELIVERING 10-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	30.00	L.F.	60	00	1,800	00
052	60.11R612 FURNISHING AND DELIVERING 12-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	1,140.00	L.F.	80	00	91,200	00
053	60.12D06 LAYING 6-INCH DUCTILE IRON PIPE AND FITTINGS	220.00	L.F.	135	00	29,700	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
054	60.12D08 LAYING 8-INCH DUCTILE IRON PIPE AND FITTINGS	60.00	L.F.	125	00	7,500	00
055	60.12D10 LAYING 10-INCH DUCTILE IRON PIPE AND FITTINGS	40.00	L.F.	100	00	4,000	00
056	60.12D12 LAYING 12-INCH DUCTILE IRON PIPE AND FITTINGS	1,200.00	L.F.	125	00	150,000	00
057	60.12D20 LAYING 20-INCH DUCTILE IRON PIPE AND FITTINGS	750.00	L.F.	130	00	97,500	00
058	60.12D24 LAYING 24-INCH DUCTILE IRON PIPE AND FITTINGS	85.00	L.F.	175	00	14,875	00
059	60.13M0A24 FURNISHING AND DELIVERING DUCTILE IRON MECHANICAL JOINT 24-INCH DIAMETER AND SMALLER FITTINGS, INCLUDING WEDGE TYPE RETAINER GLANDS	17.50	TONS	8100	00	141,750	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
060	**60.32D20532** 20-INCH DUCTILE IRON PIPE CLASS 55 WATER MAIN IN HORIZONTAL DIRECTIONAL DRILLED 32-INCH STEEL SLEEVE	1.00	L.S.	22,205,000	00	22,205,000	00
061	**61.11DMM06** FURNISHING AND DELIVERING 6-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	9.00	EACH	1,100	00	9,900	00
062	**61.11DMM12** FURNISHING AND DELIVERING 12-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	3.00	EACH	3,500	00	10,500	00
063	**61.11DMM20** FURNISHING AND DELIVERING 20-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	6.00	EACH	19,000	00	114,000	00
064	**61.11TWC03** FURNISHING AND DELIVERING 3-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH	2,100	00	2,100	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
065	**61.11TWC04** FURNISHING AND DELIVERING 4-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH	2,200	00	2,200	00
066	**61.12DMM06** SETTING 6-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	9.00	EACH	350	00	3,150	00
067	**61.12DMM12** SETTING 12-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	3.00	EACH	350	00	1,050	00
068	**61.12DMM20** SETTING 20-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	6.00	EACH	1,000	00	6,000	00
069	**61.12TWC03** SETTING 3-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH	350	00	350	00
070	**61.12TWC04** SETTING 4-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH	350	00	350	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
071	62.11SD FURNISHING AND DELIVERING HYDRANTS	9.00	EACH	1,800	00	16,200	00
072	62.12SG SETTING HYDRANTS COMPLETE WITH WEDGE TYPE RETAINER GLANDS	9.00	EACH	1,875	00	16,875	00
073	62.13RH REMOVING HYDRANTS	9.00	EACH	500	00	4,500	00
074	62.14FS FURNISHING, DELIVERING AND INSTALLING HYDRANT FENDERS	18.00	EACH	350	00	6,300	00
075	63.11VC FURNISHING AND DELIVERING VARIOUS CASTINGS	14.50	TONS	1,200	00	17,400	00
076	64.11EL WITHDRAWING AND REPLACING HOUSE SERVICES USING 1-1/2-INCH OR LARGER SCREW TAPS	9.00	EACH	650	00	5,850	00

Northeast Remsco Construction, Inc.

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
077	64.11ST WITHDRAWING AND REPLACING HOUSE SERVICES USING SMALLER THAN 1-1/2-INCH SCREW TAPS	4.00	EACH	450	00	1,800	00
078	64.12COEG CUTTING AND OFFSETTING HOUSE SERVICE WATER CONNECTIONS (EQUAL TO OR GREATER THAN 3-INCH DIAMETER)	30.00	L.F.	75	00	2,250	00
079	64.12COLT CUTTING AND OFFSETTING HOUSE SERVICE WATER CONNECTIONS (LESS THAN 3-INCH DIAMETER)	30.00	L.F.	70	00	2,100	00
080	64.12ESEG EXTENDING HOUSE SERVICE WATER CONNECTIONS (EQUAL TO OR GREATER THAN 3-INCH DIAMETER)	30.00	L.F.	160	00	4,800	00
081	64.12ESLT EXTENDING HOUSE SERVICE WATER CONNECTIONS (LESS THAN 3-INCH DIAMETER)	30.00	L.F.	100	00	3,000	00
082	64.13WC12 FURNISHING, DELIVERING AND INSTALLING WET CONNECTION SLEEVE ON 12-INCH WATER MAIN PIPE WITH VARIOUS OUTLETS	2.00	EACH	2,200	00	4,400	00

Northeast Remsco Construction, Inc.

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
083	65.11BR FURNISHING, DELIVERING AND INSTALLING BANDS, RODS, WASHERS, ETC., COMPLETE, FOR RESTRAINING JOINTS	250.00	LBS.	3	00	750	00
084	65.21PS FURNISHING AND PLACING POLYETHYLENE SLEEVE **Unit price bid shall not be less than: $ 0.50**	1,250.00	L.F.	0	50	625	00
085	65.31FF FURNISHING, DELIVERING AND PLACING FILTER FABRIC **Unit price bid shall not be less than: $ 0.10**	24,000.00	S.F.	0	10	2,400	00
086	65.71SG FURNISHING, DELIVERING AND PLACING SCREENED GRAVEL OR SCREENED BROKEN STONE BEDDING	170.00	C.Y.	50	00	8,500	00
087	7.13 B MAINTENANCE OF SITE **Unit price bid shall not be less than: $ 8,500.00**	30.00	MONTH	8,500	00	255000	00
088	7.36 PEDESTRIAN STEEL BARRICADES	2,900.00	L.F.	2	00	5,800	00

Northeast Remsco Construction, Inc.

Department of Design and Construction

2/27/2017 10:08 AM

NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE - BUREAU OF DESIGN

PROJECT ID: HED564
CONTRACT PIN: 8502017WM0014C

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
089	7.88 AA RODENT INFESTATION SURVEY AND MONITORING Unit price bid shall not be less than: $ 10,000.00	1.00	L.S.	10,000	00	10,000	00
090	7.88 AB RODENT BAIT STATIONS Unit price bid shall not be less than: $ 60.00	60.00	EACH	60	00	3600	00
091	7.88 AC BAITING OF RODENT BAIT STATIONS Unit price bid shall not be less than: ~~$ 8.50~~ 9 50 BPW 03/29/17	35.00	EACH	BPW 03/29/17 9	50	BPW 03/29/17 332	50
092	7.88 AC BAITING OF RODENT BAIT STATIONS Unit price bid shall not be less than: $ 9.50	25.00	EACH	9	50	237	50
093	7.88 AD WATERBUG BAIT APPLICATIONS Unit price bid shall not be less than: $ 65.00	15.00	BLOCK	65	00	975	00
094	70.21DK DECKING	300.00	S.Y.	25	00	7,500	00

Northeast Remsco Construction, Inc.

CORRECTED BID PAGE

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	COL. 5 CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	COL. 6 CTS
089	**7.88 AA** RODENT INFESTATION SURVEY AND MONITORING **Unit price bid shall not be less than: $ 10,000.00**	1.00	L.S.	10,000	00	10,000	00
090	**7.88 AB** RODENT BAIT STATIONS **Unit price bid shall not be less than: $ 60.00**	60.00	EACH	60	00	3,600	00
091	**7.88 AC** BAITING OF RODENT BAIT STATIONS **Unit price bid shall not be less than: $ 8.50**	35.00	EACH	8	50	297	50
092	**7.88 AC** BAITING OF RODENT BAIT STATIONS **Unit price bid shall not be less than: $ 9.50**	25.00	EACH	9	50	237	50
093	**7.88 AD** WATERBUG BAIT APPLICATIONS **Unit price bid shall not be less than: $ 65.00**	15.00	BLOCK	65	00	975	00
094	**70.21DK** DECKING	300.00	S.Y.	25	00	7,500	00

Northeast Remsco Construction, Inc.

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
095	70.31FN FENCING **Unit price bid shall not be less than: $ 2.00**	2,500.00	L.F.	2	00	5,000	00
096	70.51EO EXCAVATION OF BOULDERS IN OPEN CUT **Unit price bid shall not be less than: $ 75.00**	20.00	C.Y.	75	00	1,500	00
097	70.52ET EXCAVATION OF BOULDERS IN TUNNEL SECTION	100.00	C.Y.	20	00	2,000	00
098	70.61RE ROCK EXCAVATION	15.00	C.Y.	750	00	11,250	00
099	70.71RR RIPRAP	40.00	C.Y.	200	00	8,000	00
100	70.71SB STONE BALLAST **Unit price bid shall not be less than: $ 15.00**	100.00	C.Y.	15	00	1,500	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
101	**70.71SP** SLOPE PAVEMENT	40.00	C.Y.	400	00	16,000	00
102	**70.72GS** GROUTED STONE PAVEMENT	20.00	S.Y.	400	00	8,000	00
103	**70.81CB** CLEAN BACKFILL **Unit price bid shall not be less than: $ 15.00**	700.00	C.Y.	15	00	10,500	00
104	**70.91SW12** FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 12-INCH IN DIAMETER AND LESS	12,000.00	S.F.	0	10	1,200	00
105	**70.91SW20** FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 20-INCH IN DIAMETER	9,500.00	S.F.	0	10	950	00
106	**72.11HF** HYDRAULIC FILL FOR ABANDONED SEWERS AND WATER MAINS	10.00	C.Y.	250	00	2,500	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	COL. 5 CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	COL. 6 CTS
107	**73.11AB** ADDITIONAL BRICK MASONRY **Unit price bid shall not be less than: $ 62.50**	5.00	C.Y.	62	50	312	50
108	**73.21AC** ADDITIONAL CONCRETE **Unit price bid shall not be less than: $ 62.50**	30.00	C.Y.	62	50	1,875	00
109	**73.31AE0** ADDITIONAL EARTH EXCAVATION INCLUDING TEST PITS (ALL DEPTHS) **Unit price bid shall not be less than: $ 20.00**	100.00	C.Y.	20	00	2,000	00
110	**73.41AG** ADDITIONAL SELECT GRANULAR BACKFILL **Unit price bid shall not be less than: $ 15.00**	20.00	C.Y.	47	60	952	00
111	**73.51AS** ADDITIONAL STEEL REINFORCING BARS **Unit price bid shall not be less than: $ 1.00**	3,000.00	LBS.	1	00	3,000	00
112	**76.11CR** CONSTRUCTION REPORT	1.00	L.S.	15,000	00	15,000	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
113	**8.01 C1** HANDLING, TRANSPORTING AND DISPOSAL OF NON-HAZARDOUS CONTAMINATED SOIL	4,500.00	TONS	35	00	157,500	00
114	**8.01 C2** SAMPLING AND TESTING OF CONTAMINATED/POTENTIALLY HAZARDOUS SOIL FOR DISPOSAL PURPOSES	15.00	SETS	2,000	00	30,000	00
115	**8.01 H** HANDLING, TRANSPORTING AND DISPOSAL OF HAZARDOUS SOIL	225.00	TONS	125	00	28,125	00
116	**8.01 S** HEALTH AND SAFETY	1.00	L.S.	10,000	00	10,000	00
117	**8.01 W1** REMOVAL, TREATMENT, AND DISCHARGE/DISPOSAL OF CONTAMINATED WATER	45.00	DAY	1	00	45	00
118	**8.01 W2** SAMPLING AND TESTING OF CONTAMINATED WATER	20.00	SETS	1,000	00	20,000	00

Northeast Remsco Construction, Inc.

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
119	8.08 VARIABLE MESSAGE BOARD	2.00	EACH	10,000	00	20000	00
120	8.53 WFR RETAINING WALL FLAG REPAIRS PRICE BID SHALL BE FOR THE FIXED SUM OF $ 350,000.00	1.00	F.S.	350,000	00	$350,000	00
121	9.99 FLASHING ARROW BOARD	1.00	EACH	5,000	00	5,000	00
122	BMP-7.09 LICENSED SURVEYOR	2.00	DAY	3,000	00	6,000	00
123	BMP-7.301 DEBRIS REMOVAL AND DISPOSAL	30.00	C.Y.	250	00	7,500	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
124	**BMP-7.307-A** GRADING	24,000.00	S.F.	1	00	24,000	00
125	**BMP-7.401-J** HERBACEOUS PLANTS (PLUGS)	804.00	EACH	21	00	16,884	00
126	**BMP-7.404-A** RESTORATION SPECIALIST	360.00	HRS	95	00	34,200	00
127	**BMP-7.404-B** EROSION AND SEDIMENT CONTROL LICENSED/CERTIFIED PROFESSIONAL	100.00	DAY	400	00	40,000	00
128	**BMP-7.413** TEMPORARY GOOSE EXCLUSION FENCE	336.00	L.F.	18	00	6,048	00
129	**BMP-7.417** DEBRIS EXCLUSION FENCE	130.00	L.F.	45	00	5,850	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
130	**BMP-7.502** CONSTRUCTION LIMIT FENCE	520.00	L.F.	10	00	5,200	00
131	**BMP-7.504A** SILT FENCE	220.00	L.F.	15	00	3300	00
132	**BMP-7.509-A** STABILIZED CONSTRUCTION ENTRANCE	2.00	EACH	5,000	00	10,000	00
133	**BMP-7.510** PORTABLE SEDIMENT TANK	1.00	EACH	500	00	500	00
134	**BMP-7.511** STORM DRAIN INLET PROTECTION	3.00	EACH	1,200	00	3,600	00
135	**BMP-7.516** TURBIDITY CURTAIN	200.00	L.F.	45	00	9,000	00

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
136	**PK-482B** REMOVING AND REINSTALLING EXISTING PLAQUES	1.00	EACH	2,500	00	2,500	00
137	**UTL-6.01.9** GAS MAIN CROSSING WATER MAIN UP TO 20" IN DIAMETER (S6.01) **Unit price bid shall not be less than: $ 485.00**	4.00	EACH	485	00	1,940	00
138	**UTL-6.03** REMOVAL OF ABANDONED GAS FACILITIES. ALL SIZES. (S6.03) **Unit price bid shall not be less than: $ 15.00**	40.00	L.F.	15	00	600	00
139	**UTL-6.05** ADJUST HARDWARE TO GRADE BY RESETTING. (ROAD RECONSTRUCTION.) (S6.05) **Unit price bid shall not be less than: $ 65.00**	5.00	EACH	65	00	325	00
140	**UTL-6.06** SPECIAL CARE EXCAVATION AND BACKFILLING (S6.06) **Unit price bid shall not be less than: $ 180.00**	50.00	C.Y.	180	00	9,000	00
141	**UTL-6.07** TEST PITS FOR GAS FACILITIES (S6.07) **Unit price bid shall not be less than: $ 100.00**	30.00	C.Y.	100	00	3,000	00

Northeast Remsco Construction, Inc.

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
142	UTL-GCS-2WS GAS INTERFERENCES AND ACCOMMODATIONS PRICE BID SHALL BE FOR THE FIXED SUM OF $ 30,000.00	1.00	F.S.	30,000	00	$30,000	00

SUB-TOTAL: $ ~~25,419,361.50~~ 03/29/17 #25,419,396.50

143	6.39 A MOBILIZATION BID PRICE OF MOBILIZATION SHALL NOT EXCEED 4% OF THE ABOVE SUB-TOTAL PRICE.	1.00	L.S.	875,000	00	875,000	00

TOTAL BID PRICE: $ ~~26,294,361.50~~ #26,294,396.50 03/29/17

PLEASE BE SURE A LEGIBLE BID IS ENTERED FOR EACH ITEM.
THE BIDDER SHALL INSERT THE TOTAL BID PRICE IN
THE BID FORM ON PAGE C-4 OF THIS BID BOOKLET.

CORRECTED BID PAGE

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
142	UTL-GCS-2WS GAS INTERFERENCES AND ACCOMMODATIONS PRICE BID SHALL BE FOR THE FIXED SUM OF $ 30,000.00	1.00	F.S.	30,000	00	$30,000	00

SUB-TOTAL: $ 25,419,361.$\frac{50}{100}$

143	6.39 A MOBILIZATION BID PRICE OF MOBILIZATION SHALL NOT EXCEED 4% OF THE ABOVE SUB-TOTAL PRICE.	1.00	L.S.	875,000	00	875,000	00

TOTAL BID PRICE: $ 26,294,361.$\frac{50}{100}$

PLEASE BE SURE A LEGIBLE BID IS ENTERED FOR EACH ITEM.
THE BIDDER SHALL INSERT THE TOTAL BID PRICE IN
THE BID FORM ON PAGE C-4 OF THIS BID BOOKLET.

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

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

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

Name of Bidder: NORTHEAST REMSCO CONSTRUCTION, INC.

Date of Bid Opening: 03.03.17

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

Place of Business of Bidder: 1433 RT. 34 S, B1, FARMINGDALE, NJ 07727

Bidder's Telephone Number: 732-557-6100 Fax Number: 732-736-8904

Bidder's E-Mail Address: engineering@northeastremsco.com

Residence of Bidder (If Individual): _____

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

Names of Partners	Residence of Partners
N	
A	

If Bidder is a Corporation, fill in the following blanks:
Organized under the laws of the State of NEW JERSEY

Name and Home Address of President: ROLANDO ACOSTA
1517 SILVERTON ROAD, TOMS RIVER, NJ 08755

Name and Home Address of Secretary: MARCELO AFONSO
148 LILAC DRIVE, TOMS RIVER, NJ 08753

Name and Home Address of Treasurer: MARCELO AFONSO
148 LILAC DRIVE, TOMS RIVER, NJ 08753

BID FORM

Northeast Remsco Construction, Inc.

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 C-6 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 herein shall mean the individual bidder, firm, partnership or corporation executing this bid).

6. Compliance Report

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

The bidder, as an individual, or as a member, partner, director, or officer of the bidder, if the same be a firm, partnership, or corporation, executes this document expressly warranting that he will comply with: (1) the provision of the contract on providing records, Chapter 8.

7. By submission of this bid, the bidder certifies that it now has and will continue to have the financial capability to fully perform the work required for this contract. Any award of this contract will be made in reliance upon such certification. Upon request therefor, the bidder will submit written verification of such financial capability in a form that is acceptable to the department.

8. In accordance with Section 165 of the State Finance Law, the bidder agrees that tropical hardwoods, as defined in Section 165 of the State Finance Law, shall not be utilized in the performance of this Contract, except as the same are permitted by the foregoing provision of law.

9. The bidder has visited and examined the site of the work and has carefully examined the Contract in the form approved by the Corporation Counsel, and will execute the Contract and perform all its items, covenants and conditions, and will provide, furnish and deliver all the work, materials, supplies, tools and appliances for all labor and materials necessary or required for the hereinafter named work, all in strict conformity with the Contract, for the prices set forth in the Bid Schedule:

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

Section V: Vendor Certification and Required Affirmations:

I hereby:

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

BID FORM

PROJECT ID. HED564

TOTAL BID PRICE: In the space provided below, the Bidder shall indicate its Total Bid Price in figures. Such Total Bid Price is set forth on the final page of the Bid Schedule.

TOTAL BID PRICE:
(a/k/a BID PROPOSAL)

~~$26,294,361.50~~

BB 3/3/17

$26,294,396.50

BDV 03/29/17

BIDDER'S SIGNATURE AND AFFIDAVIT

Bidder: NORTHEAST REMSCO CONSTRUCTION, INC.

By: _____ ROLANDO E. ACOSTA, PRES.
(Signature of Partner or corporate officer)

_____ MARCELO R. AFONSO, SEC.

Attest:
(Corporate Seal)

Secretary of Corporate Bidder

NORTHEAST REMSCO CONSTRUCTION INC CORPORATE SEAL 1991 NEW JERSEY

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

CORRECTED BID PAGE

BID FORM

PROJECT ID. HED564

TOTAL BID PRICE: In the space provided below, the Bidder shall indicate its Total Bid Price in figures. Such Total Bid Price is set forth on the final page of the Bid Schedule.

TOTAL BID PRICE:
(a/k/a BID PROPOSAL)

$ 26,294,361.50/100

BB 3/3/17

BIDDER'S SIGNATURE AND AFFIDAVIT

Bidder: NORTHEAST REMSCO CONSTRUCTION, INC.

By: _____ ROLANDO E. ACOSTA, PRES.
(Signature of Partner or corporate officer)

_____ MARCELO R. AFONSO, SEC.
Secretary of Corporate Bidder

Attest:
(Corporate Seal)

NORTHEAST REMSCO CONSTRUCTION INC. CORPORATE SEAL 1991 NEW JERSEY

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

BID FORM (TO BE NOTARIZED)

AFFIDAVIT WHERE BIDDER 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

N
A

AFFIDAVIT WHERE BIDDER 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 BIDDER IS A CORPORATION

STATE OF NEW ~~YORK~~ JERSEY, COUNTY OF MONMOUTH ss:

ROLANDO E. ACOSTA being duly sworn says:
I am the PRESIDENT of the above named corporation whose name is subscribed to and which executed the foregoing bid. I reside at 1517 SILVERTON ROAD, TOMS RIVER NJ 08755
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
3RD day of MARCH, 2017

Notary Public

JOAN BUCKMAN
NOTARY PUBLIC
MY COMMISSION EXPIRES
NOTARY NO.
2276324
06/20/2021
NEW JERSEY

NORTHEAST REMSCO CONSTRUCTION INC
CORPORATE
SEAL
1991
NEW JERSEY

AFFIRMATION

PROJECT ID. HED564

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: NORTHEAST REMSCO CONSTRUCTION, INC.
Address: 1433 ROUTE 34 SOUTH, B1
City FARMINGDALE State NJ Zip Code 07727

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

/X/ C- Corporation
EMPLOYER IDENTIFICATION NUMBER
22-3131714

NORTHEAST REMSCO CONSTRUCTION INC. CORPORATE SEAL 1991 NEW JERSEY

By: X
Signature

Title: ROLANDO E. ACOSTA, PRESIDENT

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.

BID BOND 1
FORM OF BID BOND

KNOW ALL MEN BY THESE PRESENTS. That we, Northeast Remsco Construction Inc.

hereinafter referred to as the "Principal", and Liberty Mutual Insurance Company

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 Bid Amount

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

Whereas, the Principal is about to submit (or has submitted) to the City the accompanying proposal, hereby made a part hereof, to enter into a contract in writing for Project ID: HED564, New 20" Sub-Aqueous Water Mains to City Island, Borough of the Bronx

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 3rd day of March, 2017.

(Seal)

NORTHEAST REMSCO CONSTRUCTION INC. CORPORATE SEAL 1991 NEW JERSEY

Northeast Remsco Construction Inc.

(L.S.)

Principal

By: X

ROLANDO E. ACOSTA, PRESIDENT

(Seal)

Liberty Mutual Insurance Company

Surety

By:

Lisa Nosal, Atty-in-fact

BID BOND 3

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of NEW JERSEY County of MONMOUTH ss:
On this 3RD day of MARCH, 2017, before me personally came ROLANDO E. ACOSTA to me known, who, being by me duly sworn, did depose and say that he resides at 1517 SILVERTON ROAD, TOMS RIVER, NJ 08755 that he is the PRESIDENT of NORTHEAST REHSCO CONSTRUCTION, INC. the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he signed his name thereto by like order.

Notary Public

JODI BUCKMAN NOTARY PUBLIC MY COMMISSION EXPIRES NOTARY NO 2276324 06/20/2021 NEW JERSEY

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.

N/A

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

ACKNOWLEDGEMENT OF SURETY

State of New Jersey]
|-ss
County of Passaic]

On 03/03/2017, before me personally came Lisa Nosal to me known, who, being by me duly sworn, did depose and say that she is an attorney-in-fact of Liberty Mutual Insurance Company the corporation described in and which executed the within instrument; that she knows the corporate seal of said corporation, and that the seal affixed to the within instrument is such corporate seal, and that she signed the said instrument and affixed the said seal as Attorney-in-Fact by authority of the Board of Directors of said corporation and by authority of this office under the Standing Resolutions thereof.

My Commission expires:

Notary Public

STEPHANIE A. FOY
NOTARY PUBLIC
STATE OF NEW JERSEY
MY COMMISSION EXPIRES OCTOBER 27, 2018

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. 7487060

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 W. Mallory; Lisa Nosal; Louis A. Vlahakes; Pamela J. Boyle; Robert E. Culnen

all of the city of Totowa, state of NJ 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 14th day of September, 2016.

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

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

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 14th day of September, 2016, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of American Fire and Casualty Company, Liberty Mutual Insurance Company, The Ohio Casualty Insurance Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Plymouth Twp., Montgomery County
My Commission Expires March 28, 2017
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of American Fire and Casualty Company, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts – SECTION 5. Surety Bonds and Undertakings. Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Gregory W. Davenport, the undersigned, Assistant Secretary, of American Fire and Casualty Company, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 3rd day of March, 20 17.

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

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.

ual value guarantees.

currency rate, interest rate or

LMS_12873_122013

Liberty Mutual SURETY

LIBERTY MUTUAL INSURANCE COMPANY

FINANCIAL STATEMENT — DECEMBER 31, 2015

Assets

Cash and Bank Deposits	$753,038,641
*Bonds — U.S Government	1,547,613,446
*Other Bonds	11,088,162,545
*Stocks	9,919,835,033
Real Estate	295,926,247
Agents' Balances or Uncollected Premiums	4,487,501,643
Accrued Interest and Rents	120,872,424
Other Admitted Assets	14,130,266,527
Total Admitted Assets	**$42,343,216,506**

Liabilities

Unearned Premiums		$6,580,520,311
Reserve for Claims and Claims Expense		16,917,138,677
Funds Held Under Reinsurance Treaties		210,794,503
Reserve for Dividends to Policyholders		358,033
Additional Statutory Reserve		29,659,093
Reserve for Commissions, Taxes and Other Liabilities		2,789,478,276
Total		**$26,527,948,893**
Special Surplus Funds	$67,890,944	
Capital Stock	10,000,000	
Paid in Surplus	8,829,183,823	
Unassigned Surplus	6,908,192,846	
Surplus to Policyholders		**15,815,267,613**
Total Liabilities and Surplus		**$42,343,216,506**

LIBERTY MUTUAL INSURANCE CO. INCORPORATED 1912 MASSACHUSETTS

* 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, 2015, 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 15th day of March, 2016.

T A Mikolajewski

Assistant Secretary

M/WBE PROGRAM

M/WBE UTILIZATION PLAN

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

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

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

Rejection of the Bid: The bidder must complete Schedule B: M/WBE Utilization Plan (Part II) set forth in this Bid Booklet on the pages following the section entitled "Notice to All Prospective Contractors". A Schedule B submitted by the bidder which does not include the Vendor Certification and Required Affirmations (See Section V of Part II) will be deemed to be non-responsive, unless a full waiver of the Participation Goals is granted (Schedule B, Part III). In the event that the City determines that the bidder has submitted a Schedule B where the Vendor Certification and Required Affirmations are completed but other aspects of the Schedule B are not complete, or contain a copy or computation error that is at odds with the Vendor Certification and Required Affirmations, the bidder will be notified by the Agency and will be given four (4) calendar days from receipt of notification to cure the specified deficiencies and return a completed Schedule B to the Agency. Failure to do so will result in a determination that the Bid is non-responsive. Receipt of notification is defined as the date notice is emailed or faxed (if the bidder has provided an email address or fax number), or no later than five (5) calendar days from the date of mailing or upon delivery, if delivered.

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

NOTICE TO ALL PROSPECTIVE CONTRACTORS

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

ARTICLE I. M/WBE PROGRAM

Local Law No. 129 of 2005 added and Local Law 1 of 2013 amended Section 6-129 of the Administrative Code of the City of New York (hereinafter "Section 6-129"). Section 6-129 establishes the program for participation in City procurement ("M/WBE Program") by minority- owned business enterprises ("MBEs") and women-owned business enterprises ("WBEs"), certified in accordance with Section 1304 of the New York City Charter. As stated in Section 6-129, the intent of the program is to address the impact of discrimination on the City's procurement process, and to promote the public interest in avoiding fraud and favoritism in the procurement process, increasing competition for City business, and lowering contract costs. The contract provisions contained herein are pursuant to Section 6-129, and the rules of the Department of Small Business Services ("DSBS") promulgated thereunder.

If this Contract is subject to the M/WBE Program established by Section 6-129, the specific requirements of MBE and/or WBE participation for this Contract are set forth in Schedule B of the Contract (entitled the "M/WBE Utilization Plan"), and are detailed below. The Contractor must comply with all applicable MBE and WBE requirements for this Contract.

All provisions of Section 6-129 are hereby incorporated in the Contract by reference and all terms used herein that are not defined herein shall have the meanings given such terms in Section 6-129. Article I, Part A, below, sets forth provisions related to the participation goals for construction, standard and professional services contracts. Article I, Part B, below, sets forth miscellaneous provisions related to the M/WBE Program.

PART A

PARTICIPATION GOALS FOR CONSTRUCTION, STANDARD AND PROFESSIONAL SERVICES CONTRACTS OR TASK ORDERS

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

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

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

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

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

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

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

(ii) **Participation Goals** on a Master Services Agreement will be established for individual Task Orders issued after the Master Services Agreement is awarded. If **Participation Goals** have been established on a Task Order, a contractor shall be required to submit a Schedule B – M/WBE Utilization Plan For Independently Registered Task Orders That Are Issued Pursuant to Master Services Agreements, Part II (see Pages 2-4) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; and (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end. The contractor must engage in good faith efforts to meet the **Participation Goals** as established for the Task Order unless Agency has granted the contractor a pre-award waiver of the Participation Goals in accordance with Section 6-129 and Part A, Section 10 below.

C. THE BIDDER/PROPOSER MUST COMPLETE THE SCHEDULE B INCLUDED HEREIN (SCHEDULE B, PART II). A SCHEDULE B SUBMITTED BY THE BIDDER/PROPOSER WHICH DOES NOT INCLUDE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS (SEE SECTION V OF PART II) WILL BE DEEMED TO BE NON-RESPONSIVE, UNLESS A FULL WAIVER OF THE PARTICIPATION GOALS IS GRANTED (SCHEDULE B, PART III). IN THE EVENT THAT THE CITY DETERMINES THAT THE BIDDER/PROPOSER HAS SUBMITTED A SCHEDULE B WHERE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS ARE COMPLETED BUT OTHER ASPECTS OF THE SCHEDULE B ARE NOT COMPLETE, OR CONTAIN A COPY OR COMPUTATION ERROR THAT IS AT ODDS WITH THE VENDOR CERTIFICATION AND AFFIRMATIONS, THE BIDDER/PROPOSER WILL BE NOTIFIED BY THE AGENCY AND WILL BE GIVEN FOUR (4) CALENDAR DAYS FROM RECEIPT OF NOTIFICATION TO CURE THE SPECIFIED DEFICIENCIES AND RETURN A COMPLETED SCHEDULE B TO THE AGENCY. FAILURE TO DO_

SO WILL RESULT IN A DETERMINATION THAT THE BID/PROPOSAL IS NON-RESPONSIVE. RECEIPT OF NOTIFICATION IS DEFINED AS THE DATE NOTICE IS E-MAILED OR FAXED (IF THE BIDDER/PROPOSER HAS PROVIDED AN E-MAIL ADDRESS OR FAX NUMBER), OR NO LATER THAN FIVE (5) CALENDAR DAYS FROM THE DATE OF MAILING OR UPON DELIVERY, IF DELIVERED.

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

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

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

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

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

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

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

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

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

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

(i) The Contractor advertised opportunities to participate in the Contract, where appropriate, in general circulation media, trade and professional association publications and small business media, and publications of minority and women's business organizations;
(ii) The Contractor provided notice of specific opportunities to participate in the Contract, in a timely manner, to minority and women's business organizations;
(iii) The Contractor sent written notices, by certified mail or facsimile, in a timely manner, to advise MBEs or WBEs that their interest in the Contract was solicited;
(iv) The Contractor made efforts to identify portions of the work that could be substituted for portions originally designated for participation by MBEs and/or WBEs in the M/WBE Utilization Plan, and for which the Contractor claims an inability to retain MBEs or WBEs;

(v) The Contractor held meetings with MBEs and/or WBEs prior to the date their bids or proposals were due, for the purpose of explaining in detail the scope and requirements of the work for which their bids or proposals were solicited;
(vi) The Contractor made efforts to negotiate with MBEs and/or WBEs as relevant to perform specific subcontracts, or act as suppliers or service providers;
(vii) Timely written requests for assistance made by the Contractor to Agency's M/WBE liaison officer and to DSBS;
(viii) Description of how recommendations made by DSBS and Agency were acted upon and an explanation of why action upon such recommendations did not lead to the desired level of participation of MBEs and/or WBEs.

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

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

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

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

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

PART B: MISCELLANEOUS

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

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

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

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

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

ARTICLE II. ENFORCEMENT

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

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

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

(a) entering into an agreement with the Contractor allowing the Contractor to cure the violation;
(b) revoking the Contractor's pre-qualification to bid or make proposals for future contracts;
(c) making a finding that the Contractor is in default of the Contract;
(d) terminating the Contract;
(e) declaring the Contractor to be in breach of Contract;
(f) withholding payment or reimbursement;
(g) determining not to renew the Contract;
(h) assessing actual and consequential damages;
(i) assessing liquidated damages or reducing fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the M/WBE Program, or in meeting the purposes of the Contract, the costs of meeting utilization goals through additional procurements, the administrative costs of investigation and enforcement, or other factors set forth in the Contract;
(j) exercising rights under the Contract to procure goods, services or construction from another contractor and charge the cost of such contract to the Contractor that has been found to be in noncompliance; or
(k) taking any other appropriate remedy.

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

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

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

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

Tax ID #: 22-3131714

APT E-PIN #: 85017B0068

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

Part I to be completed by contracting agency

Contract Overview

APT E- Pin #	85017B0068	**FMS Project ID#:**	HED564
Project Title/ Agency PIN #	New 20" Sub-Aqueous Water Mains to City Island /8502017WM0014C		
Bid/Proposal Response Date	MARCH 3, 2017		
Contracting Agency	Department of Design and Construction		
Agency Address	30-30 Thomson Ave. **City** Long Island City **State** NY **Zip Code** 11101		
Contact Person	Emmanuel K. Charles	**Title**	M/WBE Compliance Analyst
Telephone #	718-391-1450	**Email**	charlesem@ddc.nyc.gov

Project Description *(attach additional pages if necessary)*

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

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

Prime Contract Industry: Construction

Group	Percentage	
Unspecified*	4%	
or		
Black American	UNSPECIFIED*	
Hispanic American	UNSPECIFIED*	
Asian American	UNSPECIFIED*	
Women	UNSPECIFIED*	
Total Participation Goals	4%	Line 1

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

Tax ID #: 22-3131714

APT E-PIN #: 85017B0068w

SCHEDULE B - Part II: M/WBE Participation Plan

Part II to be completed by the bidder/proposer.
Please note: For Non-M/WBE Prime Contractors who will NOT subcontract any services and will self-perform the entire contract, you must obtain a FULL waiver by completing the Waiver Application on pages 17 and 18 and timely submitting it to the contracting agency pursuant to the Notice to Prospective Contractors. Once a FULL WAIVER is granted, it must be included with your bid or proposal and you do not have to complete or submit this form with your bid or proposal.

Section I: Prime Contractor Contact Information

Tax ID #	22-3131714	**FMS Vendor ID #**	
Business Name	NORTHEAST REMSCO CONST.	**Contact Person**	ROLY ACOSTA
Address	1433 ROUTE 34 SOUTH, B1, FARMINGDALE, NJ 07727		
Telephone #	732-557-6100	**Email**	engineering@northeastremsco.com

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

PRIME CONTRACTOR ADOPTING AGENCY M/WBE PARTICIPATION GOALS

☒ **For Prime Contractors (including Qualified Joint Ventures and M/WBE firms) adopting Agency M/WBE Participation Goals.**	**Total Bid/Proposal Value**		**Agency Total Participation Goals (Line 1, Page 13)**		**Calculated M/WBE Participation Amount**
Calculate the total dollar value of your total bid that you agree will be awarded to M/WBE subcontractors for services and/or credited to an M/WBE prime contractor or Qualified Joint Venture. Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.	$ 26,294,361.52	X	4%	=	$ 1,051,774.46 **Line 2**

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

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

Tax ID #: 22-3131714

APT E-
PIN #:

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

☐ As an M/WBE Prime Contractor that will self-perform and/or subcontract to other M/WBE firms a portion of the contract the value of which is at least the amount located on Lines 2 or 3 above, as applicable. The value of any work subcontracted to non-M/WBE firms will not be credited towards fulfillment of M/WBE Participation Goals. Please check all that apply to Prime Contractor:

☐ MBE ☐ WBE

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

☒ As a non M/WBE Prime Contractor that will enter into subcontracts with M/WBE firms the value of which is at least the amount located on Lines 2 or 3 above, as applicable.

Section IV: General Contract Information

What is the expected percentage of the total contract dollar value that you expect to award in subcontracts for services, regardless of M/WBE status? % 4

✓ Scopes of Subcontract Work

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

month 24-30	1.	Landscaping	$600,000.00	MBE
month 3,7+28	2.	Striping	$ 20,000.00	MBE
month 12-20	3.	Trucking	$310,000.00	MBE
month 2,12+24	4.	Pedestrian actual	$ 20,000.00	MBE
month 22	5.	Paving	$ 40,000.00	MBE
month 6-12	6.	HVAC	$8,000,000.00	N/A
	7.			
	8.			
	9.			
	10.			
	11.			
	12.			
	13.			
	14.			
	15.			
	16.			
	17.			

Tax ID #: 22-3131714

APT E-
PIN #:

Section V: Vendor Certification and Required Affirmations

I hereby:

1) acknowledge my understanding of the M/WBE participation requirements as set forth herein and the pertinent provisions of Section 6-129 of the Administrative Code of the City of New York ("Section 6-129"), and the rules promulgated thereunder;

2) affirm that the information supplied in support of this M/WBE Utilization Plan is true and correct;

3) agree, if awarded this Contract, to comply with the M/WBE participation requirements of this Contract, the pertinent provisions of Section 6-129, and the rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract;

4) agree and affirm that it is a material term of this Contract that the Vendor will award the total dollar value of the M/WBE Participation Goals to certified MBEs and/or WBEs, unless a full waiver is obtained or such goals are modified by the Agency; and

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

Signature	X	**Date**	03.03.17
Print Name	ROLANDO E. ACOSTA	**Title**	PRESIDENT

NORTHEAST REMSCO CONSTRUCTION, INC. CORPORATE SEAL 1991 NEW JERSEY

APPRENTICESHIP PROGRAM REQUIREMENTS

Bidders are advised that the Apprenticeship Program Requirements set forth below apply to each contract for which a check mark is indicated before the word "Yes". Compliance with these requirements will be determined solely by the City.

__√__ YES _____ NO

(1) Apprenticeship Program Requirements

Notice to Bidders: Please be advised that, pursuant to the authority granted to the City under Labor Law Section 816-b, the Department of Design and Construction hereby requires that the contractor awarded a contract as a result of this Invitation for Bids, and any of its subcontractors with subcontracts worth two million dollars or over, have, prior to entering into such contract or subcontract, apprenticeship agreements appropriate for the type and scope of work to be performed that have been registered with, and approved by, the New York State Commissioner of Labor. In addition, the contractor and its subcontractors will be required to show that such apprenticeship program/s have successfully passed the two year Probation period following the initial registration date of such program/s with the New York State Department of Labor.

The failure to prove, upon request, that these requirements have been met shall result in the contract not being awarded to the contractor or the subcontract not being approved.

Please be further advised that, pursuant to Labor Law Section 220, the allowable ratio of apprentices to journeypersons in any craft classification shall not be greater than the ratio permitted to the contractor as to its workforce on any job under the registered apprenticeship program.

(2) Apprenticeship Program Questionnaire

The bidder must submit a completed and signed Apprenticeship Program Questionnaire. The Questionnaire is set forth on the following page of the Bid Booklet.

APPRENTICESHIP PROGRAM QUESTIONNAIRE ("APQ")

Bidder Name: NORTHEAST REMSCO CONSTRUCTION, INC.

Project ID Number: HED564

The Bidder MUST complete, sign, and submit this Apprenticeship Program Questionnaire with its bid.

1. Does the bidder have any Apprenticeship Program agreement(s) appropriate for the type and scope of work to be performed? (Note: Participation may be by either direct sponsorship or through collective bargaining agreement(s).)

   X YES _____ NO

2. Has/have the bidder's Apprenticeship Program agreement(s) been registered with, and approved by the New York State Commissioner of Labor ("NYSDOL Commissioner")?

   X YES _____ NO

3. Has/have the bidder's Apprenticeship Program successfully passed the two-year Probation period following its initial registration with the New York State Department of Labor ("NYSDOL")?

   X YES _____ NO

If the answers to Questions 1, 2, and 3 are "Yes". The bidder shall, in the space below (and/or attached herewith where applicable), provide the contact information for such Apprenticeship Program(s) as well as information demonstrating that such Apprenticeship Program(s) have passed the two-year Probation period following its initial registration with the NYSDOL. (The bidder may attach additional pages if necessary).

- **Where the bidder directly sponsors any such apprenticeship Program(s),** the bidder shall provide the following:
  - The trade classification(s) covered by such program(s), and the date(s) such program(s) was/were approved by the NYSDOL Commissioner; and/or
  - A copy of a letter(s) from the NYSDOL, on NYSDOL's letterhead, executed by an official thereof, which verifies/verify the trade classification(s) covered by such program(s), and the date(s) such program(s) was/were approved by the NYSDOL Commissioner and the Active status of such program(s).

- **Where the bidder participates in any such Apprenticeship Program(s) through its membership in an employer organization(s) that directly sponsors such program(s) or where the employer association(s) participates in such program(s) through collective bargaining,** the bidder shall provide the following:
  - The contact information for the employer organization(s), and the apprenticeable trade(s) covered pursuant to the bidder's affiliation therewith, and the date such program(s) was/were approved by the NYSDOL Commissioner; or
  - A letter(s) from such employer organization(s), on letterhead of such organization(s), executed by an officer, delegate or official thereof, which verifies/verify the trade classification(s) covered by such program(s) was/were approved by the NYSDOL Commissioner, and that the bidder is both a member in good standing of the identified employer organization and is subject to the provisions of the Apprenticeship Program agreement(s) sponsored thereby.

APPRENTICESHIP PROGRAM QUESTIONNAIRE ("APQ")

Project ID Number: HED.564

- **Where the bidder participates in any such Apprenticeship Programs through collective bargaining agreements,** the bidder shall provide the following:
    - The contact information for such collective bargaining entity(ies) and the apprenticeable trade(s) covered pursuant to the bidder's affiliation therewith;
    - A letter(s) from such collective bargaining entity(ies), on letterhead of such entity(ies), executed by an officer, delegate or official thereof, which verifies/verify the bidder's status as a signatory/participant in good standing to such collective bargaining entity(ies) Apprenticeship Program Agreements.

*SEE ATTACHED "GCA OF NY LETTER OF GOOD STANDING & UNION AFFILIATIONS" DATED 9/27/16.

REMSCO CONSTRUCTION INC. CORPORATE SEAL 1991 NORTH EAST NEW JERSEY

Bidder:

By: X (Signature of Partner or Corporate Officer)

Title: ROLANDO E. ACOSTA PRESIDENT

Date: 03.03.17

THE GENERAL CONTRACTORS ASSOCIATION OF NEW YORK, INC.

Denise M. Richardson
Executive Director

September 27, 2016

Northeast Remsco Construction Inc.
Attn: Mr. Rolando Acosta
1433 Highway 34, South Building B
Farmingdale, NJ 07727

Dear Mr. Acosta:

Northeast Remsco Construction Inc. is a member in good standing of the General Contractors Association of New York ("GCA"). Through your membership in the GCA, you have authorized the GCA to enter into collective bargaining agreements on your behalf.

As such, your firm is signatory to the collective bargaining agreements and participates in and upholds all provisions of those agreements, including but not limited to participation in the unions' established and approved apprenticeship programs.

The General Contractors Association has collective bargaining agreements with the following unions:

- Laborers International Union of North America
  Local 731, Heavy Construction Laborers
  Local 29 Drillers and Blasters
  Local 147 Tunnel Workers
  Local 1010 Asphalt Pavers
- New York District Council of Carpenters
  Local 1556 Dockbuilders/Timbermen
- International Union of Operating Engineers
  Local 14 / 15 Operating Engineers
  Local 15 C Operating Engineers Mechanics & Helpers
  Local 15 D Surveyors
- International Brotherhood of Teamsters Local 282
- Metallic Lathers Local 46

Please contact me if you require additional information.

Sincerely,

John Murray
Deputy Director of Labor Relations

60 E. 42nd Street - Suite 3510, New York, NY 10165 Tel: (212) 687-3131 Fax: (212) 808-5267 Website: www.gcany.com

Project ID. HED564

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: NORTHEAST REMSCO CONSTRUCTION, INC.

DDC Project Number: HED 564

Company Size: ____ Ten (10) employees or less

X Greater than ten (10) employees

Company has previously worked for DDC X YES ____ NO

2. Type(s) of Construction Work

TYPE OF WORK	LAST 3 YEARS	THIS PROJECT
General Building Construction		
Residential Building Construction		
Nonresidential Building Construction	X	
Heavy Construction, except building	X	
Highway and Street Construction	X	
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	X	
Specialty Trade Contracting	X	
Asbestos Abatement		
Other (specify)		
TUNNELING & MICROTUNNELING	X	

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.

Project ID. HED564

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

YEAR	INTRASTATE RATE (NJ)	INTERSTATE RATE
2016	0.519	1.16
2015	1.034	1.25
2014	0.863	1.12

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

4. OSHA Information:

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

___ YES X NO Contractor has had an incident requiring OSHA notification within 8 hours (all work-related fatalities) or an incident requiring OSHA notification within 24 hours (all work-related in-patient hospitalizations, all amputations and all losses of an eye).

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

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

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

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

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

YEAR	TOTAL NUMBERS OF HOURS WORKED BY EMPLOYEES	INCIDENT RATE
2016	470,706 1/2	0.42
2015	517,466	1.54
2014	552,003	0.36

Project ID. HED564

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

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

5. Safety Performance on Previous DDC Project(s)

___ YES X NO Contractor previously audited by the DDC Office of Site Safety.

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

___ YES X NO Accident on previous DDC Project(s).

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

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

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

Date: 03.03.17 By: X _____

(Signature of Owner, Partner, Corporate Officer)

Title: ROLANDO E. ACOSTA, PRESIDENT

EAST REMSCO CONSTRUCTION INC. CORPORATE SEAL 1991 NEW JERSEY

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, such information must be submitted by the bidder 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 must be submitted. The types of information the bidder may be required to submit are described below. 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 27 through 29 of this Bid Booklet. The Project Reference Form consists of 3 parts: (1) Contracts Completed by the Bidder, (2) Contracts Currently Under Construction by the Bidder, and (3) Pending Contracts Not Yet Started by the Bidder.

(B) **Copy of License:** If required, the bidder must submit a copy of the license under which the bidder will be performing the work. Such license must clearly show the following: (1) Name of the Licensee, (2) License Number, and (3) Expiration date of the License. A copy of the license will be required from bidders for the following contracts: Plumbing Work, Electrical Work and Asbestos Abatement.

(C) **Financial Information:** If required, the bidder must submit the financial information described below:

(1) Audited Financial Statements: Financial statements (Balance Sheet and Income Statement) of the entity submitting the bid, as audited by an independent auditor licensed to practice as a certified public accountant (CPA). Audited financial statements for the three most recent fiscal years must be submitted. Each such financial statement must include the auditor's standard report.

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

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

(2) Schedule of Aged Accounts Receivable, including portion due within ninety (90) days.

information described below:

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

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

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

A. PROJECT REFERENCES – CONTRACTS COMPLETED BY THE BIDDER

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

Project & Location	Contract Type	Contract Amount ($000)	Date Completed	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. if different from owner
* SEE ATTACHED "CONTRACTS - PROJECT EXPERIENCES"					

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
10585 N	Newark Energy Center 955 Delancy Street Newark, NJ 07105	NEC Service Agreement 2016 - Cable Inspection Support Newark, NJ	XX		Newark Energy Center Robert Haley 860-301-2620	$96,750.00	Apr-16
10570 N	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - Kemsco Construction & Equipment	PSE&G Crossing C11 Bogota, NJ		XX	Kemsco Construction & Equipment Ralph Serpe 973-733-2255 kemscoinc@aol.com	$995,360.00	Jun-16
10565 N	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - Kemsco Construction & Equipment	PSE&G Crossing C10, Shafts & Tunnels Hackensack, NJ		XX	Kemsco Construction & Equipment Ralph Serpe 973-733-2255 kemscoinc@aol.com	$3,145,000.00	Dec-15
10550 N	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - J. Fletcher Creamer & Son	Crossing C2 & C3 Hackensack, NJ		XX	J. Fletcher Creamer & Son, Inc. Mark Domingues 201-488-9800 mdomingues@jfcson.com	$73,000.00	Aug-16
10535 N	New Jersey American Water 1025 Laurel Oak Road Voorhees, NJ 08043	18" Water Main Emergency Repair Monmouth County, NJ			New Jersey American Water Chris Olsen 856-309-4758	$1,000,000.00	Aug-15
10530 N	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - Kemsco Construction & Equipment	PSE&G Crossing C17 & C18, Shafts & Tunnels Bergen County, NJ		XX	Kemsco Construction & Equipment Ralph Serpe 973-733-2255 kemscoinc@aol.com	$1,716,725.00	Dec-15
10515 N	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - Kemsco Construction & Equipment	Crossing F-3 & F-7 Microtunnel under NJ Transit Bergen County, NJ		XX	Kemsco Construction & Equipment Ralph Serpe 973-733-2255 kemscoinc@aol.com	$1,744,950.00	Mar-16
10510 N	City of Baltimore DPW 600 Abel Wolman Municipla Building Baltimore, MD 21202 GC - Archer Western	Back River Wastewater Plant Microtunnel 54" Casing Pipe Contract No. SC-882 Baltimore, MD		XX	Archer Western Stephen McMillian 404-495-8700 smcmillan@walshgroup.com	$807,000.00	Jun-16
10505	ABB, Inc. / Bayonne Energy Center One Hess Plaza Woodbridge, NJ 07095 GC - Caldwell Marine International, LLC	NEC Duct Bank Repair Newark, NJ		XX	Caldwell Marine International, LLC Gerald Grasso 732-267-6530	$462,819.00	Oct-15
10500 R	New Jersey American Water 1025 Laurel Oaks Road Voorhees, NJ 08043	Lakewood Sewer System Meter Installation Lakewood, NJ	XX		New Jersey American Water Andrew Higgins, P.E. 856-6162 andy.higgins@amwater.com	$50,000.00	Jul-15

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
10495	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - Kemsco Construction & Equipment	PSE&G Crossing A4, A12 & A13 Microtunneling & Shafts Bergen County, NJ		XX	Kemsco Construction & Equipment Ralph Serpe 973-733-2255 kemscoinc@aol.com	$2,822,630.00	Jul-15
10475	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - Kemsco Construction & Equipment	PSE&G Crossing H6 Shafts & Tunnels Jersey City, NJ		XX	Kemsco Construction & Equipment Ralph Serpe 973-733-2255 kemscoinc@aol.com	$1,588,000.00	Jul-15
10465	New Jersey American Water 1025 Laurel Oak Road Hillsborough, NJ 08844	Raritan Millstone WTP Sedimentation Basin & Sludge PS Imprvmnts Contract No. 3A Bridgewater, NJ	XX		New Jersey Americal Water Manoj Patel, P.E. 908-431-3264	$3,562,730.00	Jun-16
10440	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - J. Fletcher Creamer & Son	PSE&G Crossing 10A & 10B - Microtunneling & Shafts Camden, NJ		XX	J. Fletcher Creamer & Son Scott Donadio 201-488-9800	$4,279,204.00	Mar-15
10430	The City of Nashua 229 Main Street Nashua, NH 03061 GC - Metuen Construction	Nashua CSO 005-006 Screening & Disinfecting Facility Contract No. 2006-S-0002 Nashua, NH		XX	Metuen Construction Co. Inc. Jay Spooner 603-328-2234	$946,362.00	Aug-14
10425	NJ Dept. of Transportation 1035 Parkway Avenue Trenton, NJ 08625 GC - Conti Enterprises	Rt. 295/42/Interstate 76 Direct Connection, Contract 2 Contract No. 026113010 Camden & Burlington Counties, NJ		XX	Conti Enterprises, Inc. Greg Kerrigan 732-520-5056	$700,000.00	Nov-14
10410	New Jersey American Water 1025 Laurel Oak Road Voorhees, NJ 08043	Raritan Millstone WTP Sedimentation Basin 1 & 2 Imprvmnts. Contract No. 3B Bridgewater, NJ	XX		Gannett Fleming, Inc. Robert Ulrich, P.E. 908-755-0040	$4,026,000.00	Jun-15
10405	City of Middletown 245 DeKoven Drive Middletown, CT 06457	Wastewater Force Main Mattabassett Regionalization Project CT DEEP CWF-487C (Bid # 2013-008) Middletown - Cromwell, CT	XX		Prime AE Arthur Choquette, PE 860-436-5600	$15,606,169.16	Sep-16
10400	WA Chester & PSEG 101 East Broadway Hackensack, NJ 07601 GC - JF Creamer & Son	Merchantville Segment 3 *Microtunneling Services* JFC 13-5886-02		XX	J. Fletcher Creamer & Son, Inc. Scott Donadio 201-488-9800	$1,570,786.00	Apr-15
10395	Borough of Brielle 601 Union Lane Brielle, NJ 08730	Union Lane Elevated Water Storage Tank Project No. 05091-0001 Brielle, NJ	XX		Paulus, Sokolowski & Sartor Sandra Smith, P.E. 848-206-2618	$3,001,307.00	Jun-16
10390	Village of Suffern, NY 61 Washington Avenue Suffern, NY 10901	WWTP Digestion System Upgrade Contract No. 2013-1A General Suffern, NY	XX		O'Brien & Gere Charles Sawacki 845-357-2600	$1,089,000.00	Jan-15

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
10385	North Bergen Utilities Authority 6200 Tonnell Avenue North Bergen, NJ 07047	Woodcliff WWTP Facility Improvements North Bergen, NJ	XX		Paulus, Sokolowski & Sartor, LLC Patrick Westhoven	$4,924,283.00	May-15
R							
10380	Middlesex County Utilities Authority 2571 Main Street Extension Sayreville, NJ 08872	Wastewater Reuse Pump Station Contract No. 13-8/2 (CTP) Sayreville, NJ	XX		Hatch Mott MacDonald Angelo Bufaino, P.E. 732-780-6565	$5,450,914.00	Apr-15
R							
10375	Ocean County Utilities Authority 501 Hickory Lane Bayville, NJ 08721	Force Main Emergency Repair Contract No. SD 1361 Stafford Township, NJ	XX		Ocean County Utilities Authority Neil O'Regan 732-269-4500	$320,000.00	May-14
R							
10365	NJ American Water 120 Raider Boulevard Hillsborough, NJ 08844	Rairitan Millstone WTP Accelrated Project Bridgewater, NJ	XX		NJ American Water Manjoi Patel, P.E. 908-431-3264	$7,100,000.00	Jan-15
R							
10340	NYC Department of Design & Construction 30-30 Thomson Avenue Long Island City, NY 11101	Microtunnel at Waterbury Avenue SEX20045 Bronx, NY		XX	JR Cruz Evaristo Cruz, Jr. 732-290-0700	$1,125,000.00	Nov-13
N	GC - JR Cruz						
10330	NJ American Water 1025 Laurel Oaks Road Voorhees, N.J. 08043	Swimming River Baffle Wall Repairs Tinton Falls, N.J.	XX		NJ American Water Christopher Olsen 856-309-4758	$66,500.00	Nov-13
R							
10325	Texas Eastern Transmission (aka Spectra Energy) 150 Warren Street, Suite 201 Jersey City, NJ 07302	Bayonne Tunnels Bayonne, NJ		XX	Henkels & McCoy Alan Robbins 215-283-7834	$2,430,825.00	Nov-13
N	*GC - Henkels & McCoy*						
10320	NY State Dept. of Transportation 50 Wolf Road Albany, NY 12232	Roadway & Intersection along the NY Route 110 Cooridor *Trenchless Installation of Casing under Highway* Contract No. D262126		XX	HASA Construction, LLC Rafik Moawad, P.E. 631-501-0413	$1,020,685.00	Sep-13
N	*GC - Hasa Construction, LLC*	Nassau County, NY					
10315	Village of Suffern 61 Washington Avenue Suffern, NY 10901	Wastewater Treatment Plant Dewatering System Replacement Contract No. 2012-1A, General Suffern, NY	XX		Village of Suffern Charles Sawacki 845-357-2602	$883,100.00	Feb-14
R							
10310	NY State Dept. of Transportation 50 Wolf Road Albany, NY 12232	Reconstruction of the Staten Island Expressway *Microtunneling of Drainage Line* Contract No. D261292		XX	The Laquilla Group, Inc. Bill Forbes 718-252-0126	$615,000.00	Aug-13
N	*GC - The Laquilla Group, Inc.*	Staten Island, Richmond County, NY					
10290	Narragansett Bay Commission 1 Service Road Providence, RI 02905	Seekonk CSO Interceptor - Main Contract No. 303.04C Providence, RI	XX		The Louis Berger Group Joseph Pratt 401-521-5980	$18,657,000.00	Dec-14
N							
10285	District of Columbia Water & Sewer Authority 5000 Overlook Avenue, SW Washington, DC 20032	Tingey Street Diversion Sewer - Division B Contract No. 120020 Washington, DC	XX		Forest City Washington Lou Williams 202-496-6600	$12,455,247.00	Mar-14
N	Design Builder - FCRG Development Mgmt. LLC.						

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
10280	New Jersey Water Supply Authority 1851 Route 31	Manasquan Water Treatment Plant Upgrades Contract No. WSA B1007W	XX		New Jersey Water Supply Authority Marc Brooks	$6,740,000.00	Mar-15
R	Clinton, NJ 08809	Wall Township, NJ			908-638-6121		
10275	Public Works of the City of Charleston, SC 1256 Supply Street North Charleston, SC	Red Top Regional Pump Station & Wastewater Interceptor Phase I - Microtunnel Contract No. 90419		XX	CDM Constructors, Inc. Yaribell Hernandez 407-660-2552	$7,099,700.00	Sep-14
N	*GC - CDM Constructors, Inc.*	Charleston, SC			HernandezY@cdmsmith.com		
10270	NJ Transit One Penn Plaza East	NJCL Culvert Rehabilitation, MP 6.97 Contract 12-001XR	XX		NJ Transit Boris Rjedkin	$269,825.00	Feb-15
N	Newark, NJ 07095	Aberdeen, NJ			973-491-7455		
10265	Boprough of Red Bank 75 Chestnut Street Red Bank, NJ 07701	Red Bank Slipline Project Contract No. 022012-022 Red Bank, NJ		XX	Progressive Pipeline Management Shaun Albert 732-915-0234	$225,000.00	Jun-12
N	*GC - Progressive Pipeline Management*				sga@progressivepipe.com		
10260	NJ Turnpike Authority 581 Main Street	GSP Culvert Repairs, MP 118.5 to 121.5 Contract No. 200.245	XX		Johnson, Mirmiran & Thompson (JMT) Obioma Oti, P.E.	$7,174,107.36	Feb-14
N	Woodbridge, NJ 07095	Monmouth & Middlesex Counties, NJ			973-207-9265		
10255	NJ Turnpike Authority 581 Main Street Woodbridge, NJ 07095	GSP Widening Interchange 48 to 63, MP 57.8 to 64.9 *60" RCP Pipe Jacking* Contract No. P200.136		XX	Earle Asphalt Company Brian Cooper 732-308-1113	$295,163.76	Nov-13
N	*GC - Earle Asphalt*	Twps. of Eagleswood, Little Egg Harbor & Stafford,Ocean Cnty., NJ			bcooper@theearlecompanies.com		
10250	NJ Department of Transportation 1035 Parkway Avenue Trenton, NJ 08625	Route 18 Extension, Section 3A - Hoes Lane Corridor Contract No. 045960220 (DP11125) Piscataway, Middlesex County, NJ		XX	Intercounty Paving Associates Stephen Colasante 908-852-5868	$6,462,680.41	Oct-16
N	GC - Intercounty Paving Associates						
10245	Old Bridge Municipal Utilities Authority 15 Throckmorton Lane	Crossroads Regional Interceptor Contract No. 2011-02	XX		R3M Engineering, Inc. Mike Samuel	$7,178,600.00	Jan-15
N	Old Bridge, NJ 08857	Old Bridge, Middlesex County, NJ			732-679-7100		
10240	New Jersey American Water Co. 120 Raider Blvd. Hillsborough, NJ 08844	Canoe Brook WTP Raw Water Pump Station Upgrade Contract No. CBWTP-S38 Short Hills, NJ		XX	CDM Constructors, Inc Kevin Bradley 978-606-2713	$522,855.50	Mar-12
R	*GC - CDM Constructors, Inc.*						
10230	NYC Economic Development Corporation 110 Williams Street New York, NY 10038	Replacement of Existing Water Siphons Contract No. GE 343 Staten Island, NY		XX	CAC Industries Inc. Nick Michelli 347-436-3851	$4,345,400.00	Oct-13
N	*GC - Judlau Contracting, Inc. & CAC Industries*						
10225	New Jersey American Water Co. 1025 Laurel Oaks Road	Coastal North Water System, Chloramines Conversion Project Contract No. IP1818-17	XX		New Jersey American Water Co. Christopher Olsen, P.E.	$2,478,000.00	Jun-12
R	Voorhees, N.J. 08043	Neptune, Colts Neck & Howell, NJ			856-309-4758		

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
10220	Ocean Township Authority 224 Roosevelt Avenue	Deal Lake Emergency Siphon Replacement Deal Lake, NJ	XX		Ocean Township Authority Keith Chiaravallo	$785,000.00	Jun-11
N	Oakhurst, NJ 07755				732-531-2213		
10210	NJ Turnpike Authority 581 Main Street	Widening & Rehabilitation of the Bass River Bridge Contract No. P100.130	XX		PB Americas Mike Norris	$57,773,949.00	Mar-15
N	Woodbridge, NJ 07095	Milepost 51.9, Burlington County, NJ			609-812-5736		
10200	City of Bridgeport 595 Seaview Avenue	New River Street Pump Station Contract No. WPB-24118	XX		Malcolm Pirnie / Arcadis Timothy McDonald	$7,789,182.89	May-13
N	Bridgeport, CT 06607	Bridgeport, CT			914-641-2429		
10195	NYC Department of Design & Construction 30-30 Thomson Avenue Long Island City, NY 11101	Renovation of City Hall, Phase I Project ID, CITYHALL2 New York, NY		XX	Rockmore Contracting Corportion Steven Baltzer 631-366-6200	$914,750.00	Jun-11
N	*GC - Rockmore Contracting Corp.*						
10190	Howard County, Dept. of County Administration 6751 Columbia Gateway Drive, Suite 501	US Route 29 Water Main Replacement : Tunnel Crossing Contract No. CA 10-28	XX		Howard County, Dept. of County Administration	$2,730,795.00	Jul-11
N	Columbia, MD 21046	Montgomery Road, Ellicott City, MD			410-313-6375		
10185	New Jersey Water Supply Authority 1851 Route 31	Rehabilitation of Intrumentation & Control System Contract No. WSA B10002W	XX		New Jersey Water Supply Authority Isabelle Valente	$1,181,056.00	Apr-11
R	Clinton, NJ 08809	Manasquan WTP, Wall Twp., NJ			908-638-6121		
10180	Ocean County Utilities Authority 501 Hickory Lane	Area Wide Interceptor Rehabilitation Contract No. AW-IR-08	XX		Ocean County Utilities Authority Bill Suchadowski	$2,429,720.00	May-11
N	Bayville, NJ 08721	Brick - Lakewood, NJ			732-269-4500 x8333		
10170	Middlesex County Utilities Authority 2571 Main Street Extension	Influent Flow Meter Replacement / Redundant Primary Contract No. 09-02-10 / 09-02-11	XX		Middlesex County Utilities Authority Dan Tanzi	$6,953,746.00	Jun-12
R	Sayreville, NJ 08872	Sayreville, NJ			732-721-4313		
10160	National Railroad Passenger Corp. (Amtrak) 30th Street Station - 2955 Market Street Philadelphia, PA 19104	Conduit System & Cable Installation Contract No. C082-8167STI Metuchen to Edison, NJ		XX	Henkels & McCoy Elsaid Wahba, P.E. 215-283-7834	$1,174,982.00	Aug-10
N	*GC - Henkels & McCoy*						
10155	Metrpolitan District Commission (MDC) 555 Main Street Hartford, CT 06142	Garden Street Relief Sewer Contract No. 2009-87 Hartford, CT		XX	Paganelli Construction Corp. Don Hartman 860-623-0245 x108	$1,262,200.00	Sep-11
N	*GC - Paganelli Construction Corp.*						
10145	Middlesex Water Company 1500 Ronson Road	24" Water Main Replacement Project Contract No. 09-01	XX		Camp Dresser & McKee David Tanzi, P.E.	$4,473,250.00	Jun-11
N	Iselin, N.J. 08830	Pert Amboy to Sayreville, NJ			(732) 225-7000		
10140	NJ Meadowlands Commission One DeKorte Park Plaza	River Barge Park, Phase 1 Contract No. LA-09-01	XX		NJ Meadowlands Commission Henry Germann, P.E.	$2,116,500.00	Jun-10
N	Lyndhurst, NJ 07071				201-460-4679		

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
10135	Somerset Raritan Valley Sewerage Authority End of Polhemus Lane	Relocated Plant Outfall - Railroad Tunnel Contract No. C-09-1	XX		Camp Dresser & McKee Tom Laustsen	$4,249,790.00	Jul-11
N	Bridgewater, NJ 08807	Bridgewater Township, NJ			732-225-7000		
10130	NYC Department of Environmental Protection 59-17 Junction Boulevard	Water Main to Commerce Street Pumping Station Contract No. CAT-210WM	XX		Malcolm Pirnie/CH2M Hill, JV Larry Murphy, P.E.	$12,275,500.00	Aug-10
R	Elmhurst, NY 11373	Mount Plesant, NY			914-372-3625		
10120	NJ Transit One Penn Plaza East	Rehabilitation of Lower Hack Lift Bridge - Phase II Contract No. 09-124X	XX		NJ Transit Boris Rjedkin	$14,804,408.00	Oct-11
N	Newark, NJ 07105	Jersey City, NJ			973-491-7455		
10115	NJ Transit One Penn Plaza East	Final Design & Construction of Pennsauken Transfer Station Contract No. 09-119X	XX		NJ Transit Tom Fusco	$2,080,000.00	Aug-11
N	Newark, NJ 07105	Pennsauken, NJ			973-491-7299		
10110	El Dupont 250 Cheesequake Road	Booster Pump Station No. 2 Parlin, NJ	XX		El Dupont Jonathan Huntoo	$29,700.00	Sep-09
R	Parlin, NJ 08859				732-613-2558		
10105	Ocean County Utilities Authority 501 Hickory Lane	Concrete Tank Rehabilitation Contract No. ND-0702	XX		Ocean County Utilities Authority Bill Suchadowski	$2,651,600.00	May-11
R	Bayville, NJ 08721	Brick, NJ			732-269-4500 x8333		
10100	Bergen County Utilities Authority Foot of Mehrhof Road	Secondary Sludge Pumping Station Contract No. 08-10	XX		Alaimo Group Jack Nagle	$1,972,000.00	Aug-12
R	Little Ferry, NJ 07643	Little Ferry, NJ			609-267-8310 x244		
10095	Jersey City Municipal Utilities Authority 555 Route 40	Eighteenth Street Screening Facility Project Contract No. SSCSO-2008-16	XX		Malcolm Pirnie, Inc. Luigi Zucchin, P.E.	$3,130,460.00	Mar-11
N	Jersey City, NJ 07305	Jersey City, NJ			201-797-7400		
10085	NYC Dept. of Environmental Protection 59-17 Junction Boulevard	Bronx River Floatables Control Facilities Contract No. ER-BR-1	XX		NYC Dept. of Environmental Protection Kin Tong	$26,473,401.00	Jun-12
N	Corona, NY 11373	Bronx, N.Y.			718-595-7197		
10080	Township of Hamilton 2090 Greenwood Avenue	Treatment Plant Headworks Rehabilitation Contract No. 09-003	XX		Township of Hamilton Don Ragazzo	$411,114.00	Jun-09
N	Hamilton, N.J. 08650-0150	Hamilton, Mercer County, NJ			609-890-3513		
10075	State of New Jersey - NJDEP 501 East State Street	Bayshore Floodgate Bottom Roller Repair & Refurbishing Borough of Union Beach, New Jersey	XX		Bureau of Costal Engineering Erik Doyle	$640,700.00	Apr-09
N	Trenton, NJ 08625	Contract No. 4220-09			732-255-0770		
10070	NJ Department of Transportation 1035 Parkway Avenue Trenton, NJ 08625	Route 22 - Madison Avenue Drainage Improvements DP No. 08812 Union, Union County, NJ		XX	Cruz Enterprises LLC Denise Cruz - Cerpico 732-772-1140	$181,375.00	Nov-08
N	*GC - Cruz Enterprises LLC*						
10065	NJ Transit One Penn Plaza East	Replacement of Ambrose Brook Railroad Bridge Contract No. 08-100XR	XX		NJ Transit Haiha Nguyen, PM	$5,676,675.00	Mar-11
	Newark, NJ 07105	Piscataway, NJ			973-491-8096		

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
10060 R	NJ American Water 120 Raider Way Belle Mead, NJ 08502	Installation of Mansfield Wells 7 & 8 Mansfield, NJ	XX		NJ American Water Robert Biehler 908-431-3223	$1,816,000.00	Jun-09
10055 N	Metrpolitan District Commission (MDC) 555 Main Street Hartford, CT 06142	Homestead Avenue Interceptor Extension Contarct No. 2008-49 Hartford, CT	XX		AECOM James Sullivan, P.E. 860-263-5801	$22,889,625.00	Oct-11
10050 R	NJ American Water 120 Raider Way	Short Hills Pump Station Improvements Springfield, NJ	XX		Hatch Mott MacDonald Brian Slota, P.E. 973-379-3400	$2,948,000.00	May-09
10045 N	NYC Transit / Metropolitan Transit Authoirity 2 Broadway New York, NY 10004	Structural Rehabilitation of Rockaway Line Viaduct Contract C-34774 Jamaica Bay Crossing, Queens, NY	XX		NYC Transit / MTA Robert Eskenazi 646-252-6258	$17,800,000.00	Mar-11
10040 N	NYC Department of Design & Construction 30-30 Thomson Avenue Long Island City, NY 11101 *GC - DiFazio Industries, Inc.*	Construction of Sanitary & Storm Sewers of Station Avenue SE775 Queens, NY		XX	DiFazio Industries, Inc. John DiFazio 718-720-6966	$1,060,000.00	Dec-08
10035 R	Sussex County Municipal Utilities Authority 34 South, Route 94 Lafayette, NJ 07848	Upper Wall Kill WWTP Expansion Project Contract No. 601-A Hardyston, NJ	XX		Cerenzio & Panaro, P.C. Stephen E. Donati, P.E. 973-300-9003	$13,959,000.00	Jul-10
10030 N	Camden County MUA 1645 Ferry Avenue Camden, NJ 08104	Campbell Soup Central Gateway Project Camden, NJ	XX		Camden County MUA Andrew Kricun 856-541-3700	$2,793,100.00	Oct-08
10025 N	NJ American Water Company 213 Carriage Lane Delran, NJ 08075	Linden Water Main 16" - Phase 1 N05705 Linden, NJ	XX		Buchart Horn Ed DiMond 856-797-4334	$925,900.00	Aug-08
10020 N	NJ American Water 1341 North Avenue Plainfield, NJ 07062	Linden Water Main 16" - Test Pits N05705 Linden, NJ	XX		Buchart Horn Ed DiMond 856-797-4334	$23,491.00	May-08
10015 N	NJ Transit One Penn Plaza East Newark, NJ 07105	Construction of Platform Retaining Wall Improvements & Relocation of Track 5 - #07-0116X Newark Penn Station, Newark, NJ	XX		NJ Transit Dave Timmer 973-491-7737	$2,536,500.00	Mar-09
10010 N	NYC Department of Design & Construction 30-30 Thomson Avenue Long Island City, NY 11101 *GC - Maspeth Supply Company, Inc.*	Reconstruction of Brookville Boulevard HWQ724W Queens, NY		XX	Maspeth Supply Company, Inc. Harvey Blatt 718-786-7000	$436,000.00	Feb-08
10005 N	NYC Department of Environmental Protection 59-17 Junction Boulevard Corona, NY 11373 *GC - John P. Picone, Inc.*	Avenue V Pumping Station PS-79F Brooklyn, NY		XX	John P. Picone, Inc. John Picone 516-239-1600	$9,600,000.00	Dec-09
10000 R	North Jersey District Water Supply Commission 1 Orechio Drive Wanaque, NJ 07465	Emergency Hypo Feed System Contract # 882 Wanaque, NJ	XX		Hatch Mott MacDonald Craig DeWitt 973-379-3400	$707,500.00	Jan-08

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
995	NJ Department of Transportation 1035 Parkway Avenue	South Salem Street Bridge Replacement Contract MOR983400	XX		NJDOT Alex Borovskis	$11,275,271.50	Aug-09
N	Trenton, NJ 08625	Dover, NJ			732-921-3719		
990	Bergen County Utilities Authority Foot of Mehrhof Road	Overpeck Valley Relief Sewer Contract 163A	XX		Mott MacDonald Kevin Wynn, PE	$46,775,237.50	Dec-09
N	Little Ferry, NJ 07643	Ridgefield - Palisades Park, NJ			973-912-2537		
985	NYC Department of Design & Construction 30-30 Thomson Avenue Long Island City, NY 11101	72" Jacked Sleeve Water Main HWQ1161 Queens, NY		XX	NYC DDC Fran Artale 718-391-1910	$509,200.00	Apr-09
N	*GC - C.A.C. Inc.*						
980	NJ Transit One Penn Plaza East	Rehab of Four U.G. Bridges on the Raritan Valley Line	XX		NJ Transit Dave Abeles	$11,224,411.00	Apr-09
N	Newark, NJ 07105	Plainfield, NJ			973-491-7869		
970	NJ Transit One Penn Plaza East	South Amboy Train Station MP1.4/Contract 1 - Caternary Foundations & Structures	XX		NJ Transit William Schenkel	$4,223,000.00	Apr-08
N	Newark, NJ 07105	South Amboy, NJ			973-455-0140		
965	Trenton Water Works & Elizabethtown Water Company	Quaker Bridge Road Booster Station Contract 2004-2-2	XX		Hatch Mott MacDonald Mike Atland, P.E.	$2,743,600.00	Dec-07
N	Trenton, NJ 08608	Lawrence Twp., NJ			973-912-2523		
960	City of New Brunswick 78 Bayard Street	Construct Improvements to the City's WTP New Brunswick, NJ	XX		City of New Brunswick Mark Tompeck, PE HMM	$19,379,000.00	Mar-09
R	New Brunswick, NJ 08901				973-912-2526		
955	Joint Meeting of Essex & Union County 500 South First Street	Co-Generation Facilities Contract 2006-01	XX		C&E Associates Henry Johnson	$14,839,850.00	Feb-09
R	Elizabeth, NJ 07202	Elizabeth, NJ			732-727-8000		
945	New Jersey American Water Company 213 Carriage Lane	DRRWTP Pump Expansion Project - PBU 18019819	XX		MWH Americas, Inc. Joshua Hutson, P.E.	$485,500.00	Apr-07
R	Delran, NJ 08075				(201) 845-0470		
940	The East Brunswick Sewerage Authority 25 Harts Lane	Improvements to the Highview Pump Station East Brunswick, NJ	XX		CME Associates Ed Traina, P.E.	$549,600.00	Jun-07
R	East Brunswick, NJ 08815				(732) 727-8000		
935	Joint Meeting of Essex & Union County 500 South First Street	Pump Rehabilitation Project Contract 2006-02	XX		C&E Associates Mike Dzuibeck	$3,474,000.00	Oct-07
R	Elizabeth, NJ 07202	Elizabeth, NJ			732-727-8000		
930	Boro of Medford Lakes 1 Cabin Circle	Restoration of Upper / Lower Aetna Dams Contract # 2006-1	XX		Dewberry - Goodkind Peter Black, P.E.	$8,238,613.00	Apr-07
N	Medford Lakes, NJ 08055	Medford Lakes, NJ			973-739-9400		
920	WAMATA (Alpha Construction) 600 Fifth Street NW	Tunnel Work	XX		Parsons Brinckerhoff Scott Williamson	$1,275,000.00	Dec-06
N	Washington, DC 20001				703-742-5700		

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
915 N	City of Baltimore 200 Holliday Street - 11th Floor Baltimore, MD 21202	Improvements to Greenmount Branch Interceptor - Ph. 2 Contract # SC-833R Baltimore, MD	XX		City of Baltimore Avon Holland 410-396-3671	$18,210,320.00	Aug-08
910 / 912 R	NJ American Water Company 1341 North Avenue Plainfield, NJ 07062	Canal Road Water Treatment Plant - Design & Construction Somerset, NJ	XX		Gannett Fleming Lawrence Zimmerman 717-763-7211	$38,132,173.00	Jan-09
895 R	Borough of Sayreville 167 Main Street Sayreville, NJ 08872	Bordentown Avenue WTP Lime Silo Sayreville, NJ	XX		CME Associates Ed Traina, P.E. (732) 727-8000	$479,000.00	Dec-06
890 R	Township of South Brunswick 540 Ridge Road Monmouth Junction, NJ 08852	Pump Station No. 5 Generator Building Mercer County, NJ	XX		Richard A. Alaimo Associates Jack Kaczur, P.E. (609) 267-7452	$552,200.00	Jul-06
880 N	NJ American Water 216 Carriage Lane Delran, N.J. 08075	Monmouth County Transmission Improvements Neptune City, N.J.	XX		Hatch, Mott, MacDonald Mike Atland (973) 912-2523	$2,123,652.00	Apr-06
885 N	Trenton Water Works & Elizabeth Water Company Trenton, NJ 08608	2004 Water System Improvements Trenton, NJ	XX		Hatch, Mott, MacDonald Mike Atland (973) 912-2523	$6,390,300.00	Jul-07
870 R	North Hudson Sewerage Authority 1600 Adams Street Hoboken, NJ 07030	18th Street Pump Station Rehabilitation Hoboken, NJ	XX		CH2M Hill John Tobia (973) 316-9300	$3,495,700.00	Feb-07
855 N	City of Baltimore 200 North Holliday Street - 11th Floor Baltimore, MD 21202	New Jones Falls Force Main & Pressure Sewer Contract # SC-800R Baltimore, MD	XX		Whitman, Requardt & Associates, LLP Domonic Tiburzi, P.E. (443) 224-1541	$34,103,651.35	Nov-07
845 N	Conti Enterprises 3001 South Clinton Avenue South Plainfield, N.J. 07080	NJ Turnpike Auger Bores Secaucus, N.J.		XX	Conti Enterprises Paresh Patel (201) 659-3360	$410,700.00	Jul-05
840 R	New Jersey American Water Company 500 Grove Street Haddon Heights, N.J. 08035	Gloucester County Pumping Station & Rechlorination Facility	XX		Hatt, Mott, MacDonald Mike Atland (973) 912-2523	$2,053,565.00	Jun-06
835 N	Manasquan River Regional Sewerage Authority 89 Havens Bridge Road Howell, N.J. 07731	Hurley Pond Road Interceptor Contract # 34	XX		Hatch, Mott, MacDonald Peter Kocsik, P.E. (732) 780-6565	$155,626.00	Dec-05
830 R	The City of New York Department of Environmental Protection 59-17 Junction Boulevard Flushing, N.Y. 11373	Contract NC-EK11G Structure and Equipment of the English Kills Aeration Brooklyn, N.Y.	XX		URS Johnathan Clipper 201-225-3241	$6,926,078.00	Aug-09
820 N	NYC DDC 30-30 Thomson Avenue Long Island City, N.Y. 11101	Reconstruction of 32nd Street & Astoria Boulevard HWQC063A Queens, N.Y.	XX		NYC DDC Joe Cassidy (718) 365-2106	$4,563,633.00	Dec-06

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
815 R	The City of New York Department of Environmental Protection 59-17 Junction Boulevard	Contract CRO-322A Reconstruction of Kenscio Fluoride Facilities Upstate New York	XX		NYC DEP Rodney M. Osborne (718) 595-5210	$8,430,750.00	Apr-07
810 N	County of Onondaga 421 Montgomery Street Syracuse, N.Y. 13202	Eastern Branch Pipeline - Section 3 CSX's DeWitt Rail Yard East Syracuse, NY	XX		O'Brien & Gere George Flemming (315) 437-6100	$2,679,723.00	Oct-06
805 N	The Port Authority of NY & NJ One Madison Avenue, 7th Floor New York, N.Y. 10010	Bridge Creek Reprofiling Howland Hook Marine Terminal Staten Island, N.Y.	XX		The Port Authority of NY/NJ Edward Hicks (718) 727-2111	$437,208.00	Apr-05
800 N	Rahway Valley Sewerage Authority 1050 East Hazelwood Avenue Rahway, NJ 07065	Gravity Relief Sewer #156 Rahway, N.J.	XX		CCMS David Coats (732) 303-1997	$10,976,680.00	Sep-06
795 N	North Hudson Sewerage Authority 1600 Adams Street Hoboken, NJ 07030	NHSA Package 7 WNY1 S/F Facility Solids & Floatables Removal West New York, NJ	XX		CH2M Hill John Tobia (973) 316-9300	$11,264,555.00	Jun-09
790 N	Commonwealth of Virginia DOT 2901 Eisenhower Avenue Alexandria, V.A. 22313	Telegraph Road Ground Improvements Contract No.: (FO)0095-96A-105,C504		XX	Shirley Contracting Company Roy Thomson (703) 550-8100	$398,080.00	Jul-05
785 N	City of Alexandria, Virginia T&ES, Engineering & Design 301 King Street, Suite 4130 Alexandira, V.A. 22314	Tanyard Ditch Combined Sewer Relief Storm Sewer Alexandria, V.A.		XX	Fort Myer Construction Corporation Paulo J. Batista (202) 636-9535	$1,031,023.00	Sep-05
780 R	Middlesex County Utilities Authority 2571 Main Street Sayreville, N.J. 08872	Replacement of Bar Screens Sayreville Relief Pump Station Sayreville, N.J.	XX		Jacobs-BBI, Inc. Manuel Ponte, P.E. (732) 457-0700	$2,426,673.00	Aug-06
775 R	Town of Secaucus 1203 Paterson Plank Road Secaucus, N.J. 07096	Rehabilitation of Golden Avenue and Storm Water Pumping Station and Installation of Tide Gate Secaucus, N.J.	XX		PMK Group Gerald J. Perricone, P.E. (908) 497-8900	$4,222,792.00	Nov-06
755 N	NJ Transit Authority One Penn Plaza East Newark, N.J.	Madison Station ADA Improvements Contract No. 04-108 Madison, N.J.	XX		NJ DOT William Shenkel (973) 377-3108	$7,869,699.00	Oct-06
750 R	NYC DEP 57-19 Junction Boulevard, 17T Corona, NY 11368	26TH Ward WPCP - Raw Sewege Header Replacement Contract No. 26W-11G Brooklyn, NY	XX		Hazen & Sawyer, PC Thomas Walsh 212-777-8400	$18,035,958.65	Apr-10
740 R	Ocean County Utilities Authority 501 Hickory Lane Bayville, N.J. 08721	SPS-9-RI-04 High Bar Harbor Pump Station	XX		Ocean County Utilities Authority Sean Leary (732) 269-4500	$644,162.00	Aug-06
745 N	Borough of Carteret 61 Cooke Avenue Carteret, N.J. 07008	Hill District Stormwater Improvements	XX		T & M Associates Donald Norbut, P.E. (732) 671-6400	$1,807,058.00	Aug-06

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
735 R	Ocean County Utilities Authority 501 Hickory Lane Bayville, N.J. 08721	SPS-8-11-13-RI-04 Southern Pump Station Rehabilitation	XX		O'Brien & Gere Engineers, Inc. George Flemming (315) 437-6100	$2,701,964.00	Jul-06
730 N	City of Paterson 155 Market Street, 4th Floor Paterson, N.J. 07505	Combined Sewer Overflow Solids & Floatables Control Facilities Outfall	XX		City of Paterson Harry Cevallos (973) 321-1340	$3,036,769.00	Dec-05
725 R	South Monmouth Regional Sewerage Authority 1235 Eighteenth Avenue West Belmar, N.J. 07719	Sludge Digester Rehabilitation	XX		South Monmouth Regional Sewerage Michael Ruppel (732) 681-0611	$2,827,500.00	Jun-06
720 R	Borough of Mendham 2 West Main Street Mendham, N.J. 07945	Borough of Mendham Water Reclamation Facility Upgrade	XX		Borough of Mendham Doug W. Wright (973) 543-7030	$3,012,687.00	Jun-06
715 R	Shorelands Water Company 1709 Union Avenue Hazlet, N.J.	Reconstruction of Treatment Plant #1	XX		Shorelands Water Company Eric Olsen (732) 264-7300	$3,997,532.00	May-06
710 N	Middlesex Water Company 1500 Ronson Road Iselin, N.J. 08830	Raw Water Pipeline Contract No. 03-01	XX		CDM David Tanzi, P.E. (732) 225-7000	$6,089,906.00	May-05
705 N	New Jersey Depatment of Transportation 1035 Parkway Avenue Trenton, N.J. 08625	Contract No. MOR950144, DP04101 Rockaway Road Bridge over Morristown Line Randolph and Roackaway, Morris County	XX		New Jersey Department of Transportation Alex Borovskis 732-921-3719	$6,383,946.00	May-06
700 N	NYC Department of Sanitation 44 Beaver Street New York, N.Y. 10013	Rehabilitation Foundations/Pier Structure Gansevoort Street, New York Contract #1	XX		NYC Department of Sanitation Roy Bloomfield (917) 237-5603	$2,877,223.00	Jan-06
690 R	Ocean County Utilities Authority 501 Hickory Lane Bayville, N.J. 08721	Contract No. N/S-BAA-03 North/South Building Addition & Alterations Brick, N.J.	XX		Ocean County Utilities Authority Sean Leary (732) 269-4500	$579,255.00	Jan-06
685 N	Elad Properties 225 5th Avenue, Suite 501 - 5th Floor New York, NY 10010	Repair 36" North Bergen Municipal Utilities Authority Storm Sewer Line North Bergen, N.J.	XX		Jenny Engineering Prakash Donte, P.E. (973) 379-6699	$1,160,763.25	Apr-04
665 N	Westchester County Board of Acquisition & Contract 148 Martine Avenue, Room 104 White Plains, N.Y. 10601	Contract No. 03-517 Repair of Saw Mill Valley Trunk Sewer (Main Line) Elmsford, N.Y.	XX		CDM Keith Kelly (516) 496-8400	$2,067,679.00	Jun-04
660 R	Joint Meeting of Essex and Union Counties 500 South First Street Elizabeth, N.J. 07202	Contract No. 2003-02 Wastewater Treatment Plant Upgrade	XX		CME Associates Henry Johnson (732) 727-8000	$7,137,188.00	Jan-06
650 R	Elizabethtown Water Company 1341 North Avenue Plainfield, NJ 07061	Mansfield Water Supply Facilities Expansion Project	XX		Elizabethtown Water Co. Geoge J. Morris (908) 301-3470	$3,818,000.00	Dec-04
655 R	Elizabethtown Water Company 1341 North Avenue Plainfield, Nj 07601	Springfield Well Field Water Treatment Plant Springifield, N.J.	XX		Elizabethtown Water Co. Tom Laucik (908) 301-3449	$7,230,870.00	Sep-05

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
645 R	Elizabethtown Water Company 1341 North Avenue Plainfield, N.J. 07061-0110	North Bridge Booster Station North Bridge, N.J.	XX		Elizabethtown Water Co. Geoge J. Morris (908) 301-3470	$308,579.00	Apr-05
640 R	New Jersey American Water Company 1025 Laurel Oaks Road Voorhees, N.J. 08043	Jumping Brook Treatment Plant Enclosure of Chlorine Storage Area	XX		American Water Works Service Co. Jim Reilly (856) 346-8201	$1,306,000.00	Jan-05
635 R	Ocean County Utilities Authority 501 Hickory Lane Bayville, N.J. 08721	Contract CWPCF-COBA-03 Central Operations Builiding Additions and Alterations Bayville, N.J.	XX		OCUA Sean Leary (732) 269-4500	$2,464,000.00	Jan-06
630 R	Rutgers University Department of Facilities 74 Street 1603, Rm 124 Piscataway, N.J. 08854-8037	The Multispecies Aquaculture Demonstration Facility Lower Township, N.J.	XX		Rutgers University Alex Andrews (732) 445-3112	$6,316,758.00	Dec-05
615 N	Con Edison 4 Irving Place New York, N.Y. 10003	Con Edison Avenue "C" Microtunnel Manhattan, N.Y.	XX		DMJM Harris Don Hickey (212) 779-2577	$8,609,370.00	Apr-05
605 R	Ocean County Utilities Authority 501 Hickory Lane Bayville, N.J. 08721	CPS-4 Windsor Park Pump Station	XX		OCUA Wm. Suchodolski, PE (732) 269-4500	$2,787,161.00	Dec-05
600 N	NJ Transit One Penn Plaza East Newark, N.J. 07105	Morristown Rail Station ADA Improvements Morris & Essex Line, Morristown, N.J.	XX		NJ Transit Dave Timmer (973) 491-7737	$4,030,583.00	Oct-04
595 R	Ocean County Utilities Authority 501 Hickory Lane Bayville, NJ 08720	Northern Water Pollution Control Facility Plant Improvements Phase I Contract No. ND-9908	XX		OCUA Wm. Suchodolski, PE (732) 269-4500	$22,189,000.00	Dec-05
580 R	North Hudson Sewerage Authority 1600 Adams Street Hoboken, NJ 07030	Solids & Floatables Removal Package 7 West New York, NJ	XX		CH2M Hill John Tobia (973) 316-9300	$1,543,188.00	Dec-04
575 N	Narragansett Bay Commission R.P. Iannuccillo & Sons Construction Co. 70 Calverly Street Providence, RI 02908	NBC 004/061 CSO Control Facilities Program Providence, RI		XX	R.P. Iannuccillo & Sons Construction Co. Matthew Nicholson (401) 351-8877	$598,513.00	Sep-03
570 N	Frank Bennett Electric Corp. 148 Dayton Avenue Passaic, NJ 07055	Newark Public Schools		XX	Frank Bennett Electric Corp. Frank Bennett (973) 472-1578	$252,000.00	Dec-04
565 N	Washington Suburban Sanitary Commission W.F. Wilson & Sons, Inc. 7521 Cemetary Lane Elkridge, MD 21075	46th Street & Upshur Street Hyattsville Area Gravity Sewer Hyattsville, MD		XX	W.F. Wilson & Sons, Inc. Jim Thompson (443) 755-8720	$516,783.00	Apr-03
560 R	Ocean County Utilities Authority 501 Hickory Lane Bayville, NJ 08720	CWPCF Effluent Pump Station	XX		OCUA Sean M. Leary (732) 269-4500	$5,827,000.00	May-07

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
555 R	New Jersey American Water Company 500 Grove Street Haddon Heights, N.J. 08035	Upgrades to Treatment Plant @ Swimming River Reservoir Dam Tinton Falls, N.J.	XX		NJAWC Carmen Tierno, P.E. (856) 672-2804	$14,291,000.00	Jul-05
535 R	North Hudson Sewerage Authority 1600 Adams Street Hoboken, NJ 07030	Solids & Floatables Removal Project Package 2 - H5 Grit Chamber Retrofit	XX		CH2MHILL Jim Howey (973) 316-9300	$2,425,237.06	Jun-04
525 N	NJ Transit One Penn Plaza Newark, N.J. 07105	Construction of Raritan Rail Yard Pedestal Track & Yard Improvements Raritan, N.J.	XX		NJ Transit John Schulien (973) 491-7213	$6,282,840.66	Apr-04
520 R	Township of Neptune Sewerage Authority 634 Old Corlies Avenue Neptune, N.J. 07753	Biofor Treatment Plant	XX		Birdsall Engineering, Inc. Richard W. Watson, P.E., P.P., C.M.E. (732) 681-1165	$4,508,253.00	Dec-05
515 N	New Jersey American Water Company 500 Grove Street Haddon Heights, N.J. 08035	Howell to Monmouth Transmission Main (IP 99-25) Marshes Bog Brook Crossing Farmingdale, N.J.	XX		New Jersey American Water Co. Kenneth J. Seelig, P.E. (856) 672-2805	$1,099,614.00	Jun-03
499 R	Healy, Long & Jevin 2000 Rodman Road Wilmington, D.E. 19805	Swarthmore College - Science Center Swarthmore, Pennsylvania	XX		Barclay White Skanska Inc. Paul M. Scotese (610) 690-5700	$2,709,458.48	May-04
485 N	Maher Terminals, Inc. 446 West 34th Street New York, N.Y.	Maher Terminals, Inc. Berths 64, 66, 68, 70, 72, & 74 Modernization Port Elizabeth, N.J.		XX	Spearin, Preston, Burrows, Inc. Wayne Scheers (212) 563-5400	$2,596,025.63	Dec-04
480 R	Ocean County Utilities Authority 201 Hickory Lane Bayville, NJ 08721	North Meter Station Improvements Contract No. MI-2 Howell, NJ	XX		Ocean County Utilities Authority John Gianettino 732-269-4500	$584,150.00	Oct-03
475 R	Borough of Milltown 39 Washington Avenue Milltown, N.J. 08850	Church Street Pump Station Borough of Milltown, N.J.	XX		CME Associates Ed Ttraina, P.E. (732) 727-8000	$2,165,343.00	Oct-05
450 N	Borough of Matawan Monmouth, N.J.	Replacement of Matawan Creek Sanitary Sewer Interceptor Matawan, N.J.	XX		Maser Consulting P.A. Sue Brasefield (732) 383-1950	$2,271,019.16	Apr-04
430 R	Ocean County Utilities Authority 201 Hickory Lane Bayville, NJ 08721	Meter Station Improvements Contracts No. AW-002 Various Ocean County Locations, NJ	XX		Ocean County Utilities Authority John Gianettino 732-269-4500	$244,004.00	Aug-02
410 N	Township of Hamilton 2090 Greenwood Avenue Hamilton, N.J. 08650-0150	Route 130 Interceptor Replacement Township of Hamilton Water Pollution Control Mercer County	XX		Malcolm Pirnie, Inc. Richard Neuner, P.E. (201) 797-7400	$2,296,000.00	Apr-03
400 R	Middlesex County Utilities Authority Main Street Extension Middlesex, NJ 08872	Contract 00-12-2(WW) Sodium Hypochlorite Facility Sayreville, N.J.	XX		Jacobs Enviromental Manuel Ponte, P.E. (732) 457-0700	$1,327,500.00	Apr-06
390 N	NYC DDC 30-30 Thomson Avenue Long Island City, N.Y. 11101	HED-502 Bronx River Crossing 48" Water Main Bronx, N.Y.	XX		Tectonic Engineering Consultants Mina Marcos, P.E. (718) 391-9200	$4,693,729.89	Nov-04

NORTHEAST REMSCO Construction

CONTRACTS
Project Experience
Completed Projects

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	Estimated Completion Date
385	The Port Authority of New York and New Jersey J.H. Reid General Contractors, Inc. 3230 Hamilton Boulevard South Plainfield, N.J. 07080	The Construction of Elizabeth-Port Authority Marine Terminal, Express Rail Lead Track Relocation Contract No. EP-384.023 Elizabeth, N.J.		XX	J.H. Reid General Contractors, Inc. Kevin Brennan (732) 752-4050	$2,763,848.20	Dec-03
380	The Ocean County Utilities Authority 501 Hickory Lane / PO Box P Bayville, N.J. 08721	Contract CPS-I-00 Cemtral Pump Station Improvements	XX		The Ocean County Utilities Authority Sean Leary (732) 269-4500	$1,667,000.00	Feb-03
345	Borough of Sayreville 167 Main Street Sayreville, N.J. 08872	Bordentown Avenue Water Treatment Plant Sayreville, N.J.	XX		CME Associates Dave Samuel, P.E. (732) 727-8000	$18,928,066.00	Dec-06
275	NYC DDC 30-30 Thomson Avenue Long Island City, N.Y. 11101	Contract SE-713B/714B Sanitary and Storm Sewers in Barclay Avenue Staten Island, N.Y.	XX		NYC DDC Adam Alweiss, P.E. (718) 605-2174	$19,146,000.00	Apr-03
260	The Metropolitan District Commission 555 Main Street Hartford, C.T. 06142	Contract No. 99-2 East Hartford Water Pollution Control Facility Hartford, C.T.	XX		The Metropolitan District Commission Frank Dellaripa, P.E. (860) 278-7850	$5,767,500.00	Mar-04

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's Reference & Tel. No.	Architect/Engineer Reference & Tel. No. if different from owner
* SEE ATTACHED "CONTRACTS - WORK IN PROGRESS"							

NORTHEAST REMSCO Construction

CONTRACTS
Work In Progress

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	New Contract Value to Include Change Orders	Remaining Backlog	Percentage Completed	Estimated Completion Date
10630	New Jersey American Water 1025 Laurel Oak Road Voorhees, NJ 08043	Oak Glen Water Treatment Expansion Contract No. I18-190009 Farmingdale, NJ	XX		Hazen & Sawyer Eileen Feldman 212-539-7031 efeldman@hazenandsawyer.com	$18,920,000.00	$18,920,000.00	$18,920,000.00	0%	Apr-18
R										
10625	Middlesex Water Company 1500 Ronson Road Iselin, NJ 08830	Installation of 30" DIP Water Main @ Washington Road Sayreville, NJ	XX		Middlesex Water Company Chico Monterrosa 732-634-1500	$1,276,656.25	$1,276,656.25	$1,276,656.25	0%	Dec-16
N										
10615	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - J. Fletcher Creamer & Son	PSE&G BLC Newark Bay HDD Crossing Bergen / Linden Corridor, NJ		XX	J. Fletcher Creamer & Son, Inc. Mark Domingues 201-488-9800 mdomingues@jfcson.com	$1,530,000.00	$1,530,000.00	$1,530,000.00	0%	Jan-17
N										
10610	New Jersey American Water 120 Raider Boulevard Hillsborough, NJ 08844	Canoe Brook Temporary VOC System Short Hills, NJ	XX		Hatch Mott MacDonald Michael Polito 732-333-3287 michael.polito@hatchmott.com	$1,328,200.00	$1,328,200.00	$440,964.00	67%	Dec-16
R										
10600	Township of Middletown Sewerage Authority 100 Beverly Way Belford, NJ 07718	Broadway 30" Sanitary Sewer Interceptor Replacement Contract No. MSA-197 Middletown, NJ	XX		Maser Consulting Henry Martyniuk, P.E 732-383-1950 x3335	$1,055,976.00	$1,098,343.00	$46,757.20	96%	Aug-16
10595	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - J. Fletcher Creamer & Son	Microtunnel beneath Route 440, I-78 & Conrail Bergen / Linden Corridor, NJ		XX	J. Fletcher Creamer & Son, Inc. Mark Domingues 201-488-9800 mdomingues@jfcson.com	$3,240,000.00	$3,240,000.00	$3,140,000.00	3%	Feb-17
N										
10580	North Hudson Sewerage Authority 1600 Adams Street Hoboken, NJ 07030	Adams St. WWTP Preliminary Facilities Bldg. Hydrogritter System Replmnt. Contract No. S340952-23 Hoboken, NJ	XX		Hatch Mott MacDonald Karen Karvazy, P.E. 973-312-2446	$526,000.00	$526,000.00	$63,100.00	88%	May-16
R										
10575	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - Kemsco Construction & Equipment	PSE&G Crossing C14 & C15 Ridgefield, NJ		XX	Kemsco Construction & Equipment Ralph Serpe 973-733-2255 kemscoinc@aol.com	$10,917,328.00	$12,161,208.77	$365,252.00	97%	Nov-16
N										
10560	Middlesex County Utilities Authority De Sayreville, NJ 08872	Dewatering Building Odor Control Stsyem Rehabilitation Contract No. 13-9-3 (CTP) Sayreville, NJ	XX		Hatch Mott MacDonald Angelo Bufaino 732-780-6565	$2,480,000.00	$2,480,000.00	$2,294,000.00	8%	Mar-17
R										
10545	Gerdau Long Steel North America 1 Crossman Road, North Sayreville, NJ 08872	Contact Water System Construction Contract No. IC-1331-1208-SOW 2015 Sayreville, NJ	XX		Gerdau Long Steel North America Craig T. Laughlin, P.E. 732-721-6600	$6,169,300.00	$7,360,338.00	$715,695.00	90%	Jan-17
R										
10540	Middlesex County Utilities Authority 2571 Main Street, Extension Sayreville, NJ 08872	Primary Tank Rehabilitation, Phase II Contract No. 13-1-1 (CTP) Sayreville, NJ	XX		R3M Engineering, Inc. Feza Circulis, P.E. 732-679-7100	$699,300.00	$699,300.00	$90,325.80	87%	May-16
R										
10530	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - Kemsco Construction & Equipment	Crossing C17 & C18 Bogota & Hackensack, NJ		XX	Kemsco Construction & Equipment Ralph Serpe 973-733-2255 kemscoinc@aol.com	$2,034,377.00	$2,034,377.00	$280,500.00	86%	Oct-16
N										
10525	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101 GC - Kemsco Construction & Equipment	Crossing C9 Bergen County, NJ		XX	Kemsco Construction & Equipment Ralph Serpe 973-733-2255 kemscoinc@aol.com	$652,600.00	$878,646.26	$37,200.00	96%	Sep-16
N										
10520	Bayshore Reginoal Sewerage Authority 100 Oak Street Union Beach, NJ 07735	Main Pump, Sludge Return Bldg & Pump Station 1 Repairs & Mitigation Contract No. 73-S Union Beach, NJ	XX		Paulus, Sokowdowski & Sartor (PS&S) Patrick J. Westhoven, P.E. 848-206-2600 pwesthoven@psands.com	$3,379,000.00	$3,637,904.00	$587,817.00	84%	Jan-17
R										

NORTHEAST REMSCO Construction

CONTRACTS
Work In Progress

NRC Job #	Name of Owner & Address	Project Name, Contract Number & Location	Contract GC	Contract Sub	Architect / Engineer for Owner Name & Phone	Contract Amount	New Contract Value to Include Change Orders	Remaining Backlog	Percentage Completed	Estimated Completion Date
10495	PSE&G 80 Park Plaza - PO Box 570 Newark, NJ 07101	Crossings A4, A12 & A13 Athenia - Bergen, NJ		XX	Kemsco Construction & Equipment Ralph Serpe 973-733-2255	$2,822,630.00	$2,848,127.56	$108,000.00	96%	Sep-16
N	GC - Kemsco Construction & Equipment				kemscoinc@aol.com					
10490	County of Westchester, NY 148 Martine Avenue	Tarrytown Pump Station Rehabilitation & Forcemain Replacement Contract No. 13-531	XX		Hazen & Sawyer, PC Scott Armburst, P.E.	$21,461,473.00	$21,489,100.00	$9,287,801.00	57%	Sep-18
R	White Plains, NY 10601	Tarrytown, NY			800-858-9876					
10485	Washington Suburban Sanitary Commission 14501 Sweitzer Lane	Broad Creek Augmentation - Conveyance System Project, North Contract No. CT4231F05	XX		Washington Suburban Sanitary Commission Austin Freeman	$22,358,160.00	$22,433,225.38	$1,412,488.00	94%	Jun-17
N	Laurel, MD 20707	Fort Washington, MD			301-206-8328					
10480	NYC Department of Design & Construction 30-30 Thomson Avenue	Rehabilitation of Interceptor Sewers in Borden Avenue Contract No. PS-312Q	XX		D&B Engineers and Architects Joe Fioraliso, PE	$20,002,620.00	$20,002,620.00	$19,197,248.00	4%	Jun-17
N	Long Island City, NY 11101	Queens, NY			646-586-3452					
10460	NJ Turnpike Authority 581 Main Street	Bridge Deck Reconstruction, MP 121 to 131 Contract No. P100.297	XX		NJ Turnpike Authority Joe Johnson, P.E.	$40,537,044.20	$42,198,739.25	$22,752,168.00	46%	Oct-18
N	Woodbridge, NJ 07095	Monmouth & Middlesex Counties, NJ			732-750-5300					
10455	NYC Department of Design & Construction 30-30 Thomson Avenue	Construction of Sanitary Sewers & 48" Venturi Flow Meter Contract No. CS-FB-LLD	XX		NYC Department of Design & Construction Lambert Monah, P.E.	$4,164,138.52	$4,164,138.52	$3,957,491.00	5%	Jun-16
N	Long Island City, NY 11101	Queens, NY			718-391-2469					
10450	NYC Department of Design & Construction 30-30 Thomson Avenue	Construction of Outfall & Shotcreting - 81st Street Contract No. SEQ002708	XX		NYC Department of Design & Construction Lambert Monah, P.E.	$3,632,661.50	$3,632,661.50	$3,632,661.50	0%	Jun-17
N	Long Island City, NY 11101	Queens, NY			718-391-2469					
10435	Washington Suburban Sanitary Commission 14501 Sweitzer Lane	Broad Creek Augmentation - Conveyance System Project, South Contract No. CT4231E05	XX		Washington Suburban Sanitary Commission Austin Freeman	$35,794,735.00	$36,107,972.00	$10,927,239.00	70%	May-17
N	Laurel, MD 20707	Fort Washington & Accoceek, MD			301-206-8328					
10405	City of Middletown 245 DeKoven Drive	Wastewater Force Main Mattabassett Regionalization Project CT DEEP CWF-487C (Bid # 2013-008)	XX		Prime AE Arthur Choquette, PE	$15,295,736.00	$15,606,169.16	$142,989.16	99%	Nov-16
N	Middletown, CT 06457	Middletown - Cromwell, CT			860-436-5600					
10380	Middlesex County Utilities Authority 2571 Main Street Extension	Wastewater Reuse Pump Station Contract No. 13-8/2 (CTP)	XX		Middlesex County Utilities Authority David Tanzi	$5,361,000.00	$5,420,664.00	$39,688.00	99%	Dec-16
R	Sayreville, NJ 08872	Sayreville, NJ			732-721-3600					
10365	New Jersey American Water 120 Raider Boulevard	Raritan Millstone WTP Accelerated Project Contract No. 1	XX		New Jersey American Water Manoj Patel, PE	$1,684,321.00	$2,463,954.00	$35,396.00	99%	Oct-16
R	Hillsborough, NJ 08844	Bridgewater, NJ			908-431-3264					
10360	Middlesex County Utilities Authority 2571 Main Street Extension	P&I Landfill Gas Engine & Equipment Contract No. 11-14SW	XX		Middlesex County Utilities Authority David Tanzi	$7,868,829.00	$7,931,619.00	$2,318,336.60	71%	Dec-16
R	Sayreville, NJ 08872	East Brunswick, NJ			732-721-3600					
10345	County of Passaic 401 Grand Street	Rplmnt. of the West Brook Road Bridge over Wanaque Reservoir Federal Project No. STP-COOS (319)	XX		GPI - Construction Engineering Thomas A. Napolitano, PE	$30,172,843.00	$30,172,843.00	$15,407,784.00	49%	Aug-17
N	Paterson, NJ 07505	Ringwood & Wanaque, Passaic County, NJ			908-236-9001 x223					
10300	NJ Turnpike Authority 581 Main Street	GSP Shoulder Restoration & Improvements, MP 93.5 to 99.5 Contract No. P200.201	XX		Greenman - Pedersen, Inc. (GPI) Richard Seamon	$104,327,565.00	$104,327,565.00	$3,310,397.00	97%	Nov-16
N	Woodbridge, NJ 07095	Brick & Wall Townships, Ocean & Monmouth Counties, NJ			732-546-6458					
10250	NJ Department of Transportation 1035 Parkway Avenue Trenton, NJ 08625	Route 18 Extension, Section 3A - Hoes Lane Corridor Contract No. 045960220 (DP11125) Piscataway, Middlesex County, NJ		XX	Intercounty Paving Associates Stephen Colasante 908-852-5868	$5,654,594.00	$6,462,680.41	$36,714.92	99%	Oct-16
N	GC - Intercounty Paving Associates									
10090	NYC Department of Environmental Protection 59-17 Junction Boulevard	Gowanus Flushing Tunnel Reactivation Contract No. CSO-GC-G	XX		NYC Dept. of Environmental Protection Denzil Taffe, P.E.	$140,719,883.00	$140,932,007.91	$8,741,814.17	94%	Apr-17
R	Corona, NY 11373	Brooklyn, NY			718-595-6105					
					CONTRACT TOTALS	*Contract Amount* **$516,066,970.47**	*Contract Amount & Changes* **$523,365,059.97**	*Backlog Amount* **$131,096,483.60**		

**Finicial Information as of October 17, 2016, FTallman*

**Updated October 2016, JBk*

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
—	NONE	—			

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: NORTHEAST REMSCO CONSTRUCTION, INC.
Bidder's Address: 1433 RT. 34 S, B4, FARMINGDALE NJ 07727
Bidder's Telephone Number: 732-557-6100
Bidder's Fax Number: 732-736-8904
Date of Bid Opening: 03.03.17
PROJECT ID: HED564

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: 12.06.16

By: _____
(Signature of Partner or corporate officer)

Print Name: ROLANDO E. ACOSTA, PRESIDENT

NORTHEAST REMSCO CONSTRUCTION, INC. CORPORATE SEAL 1991 NEW JERSEY

(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: _____

Certificate of No Change Form

Mayor's Office of Contract Services

- Please fill in all the fields and DO NOT leave any field blank.
- 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, Rolando E. Acosta, 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: Northeast Remsco Construction, Inc.

Vendor's Address: 1433 Route 34 South, Building B, Farmingdale, NJ 07727

Vendor's EIN or TIN: 22-3131714 Requesting Agency: NYC DDC

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

Signature date on the last full vendor questionnaire signed by the submitting vendor: 12/06/2016

Signature date on changed submission, if applicable, for the submitting vendor: N/A

Principal Questionnaire

This section refers to the most recent principal questionnaire submissions.

Mayor's Office of Contract Services

	Principal Name	Date of signature on last full Principal Questionnaire	Date(s) of signature on Changed Submission (if applicable)
1	Rolando E. Acosta	12/06/2016	Not Applicable
2	John S. Gutierrez	12/06/2016	Not Applicable
3	Marcelo R. Afonso	12/06/2016	Not Applicable
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:

Rolando E. Acosta
Name (Print)

President - COO
Title

NORTHEAST REMSCO CONSTRUCTION, INC. CORPORATE SEAL 1991 NEW JERSEY

Northeast Remsco Construction, Inc.
Name of Submitting Entity

X _____ 8.1.17
Signature *Date*

Notarized By:

_____ Ocean County, NJ 2276324
Notary Public *County License Issued* *License Number*

JODI BUCKMAN NOTARY PUBLIC MY COMMISSION EXPIRES NOTARY NO. 2276324 08/20/2021 NEW JERSEY

Sworn to before me on: 8.1.17
Date

Mayor's Office of Contract Services
253 Broadway, 9th Floor New York, NY 10007
Phone: 212-788-0010 Fax: 212-788-0049

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.

X _____
SIGNATURE

ROLANDO E. ACOSTA
PRINTED NAME

PRESIDENT
TITLE

NORTHEAST REMSCO CONSTRUCTION INC. CORPORATE SEAL 1991 NEW JERSEY

Sworn to before me this
3RD day of MARCH 20 17

_____
Notary Public

JODI BUCKMAN NOTARY PUBLIC NEW JERSEY MY COMMISSION EXPIRES NOTARY NO 2276324 06/20/2021

Dated:

THE CITY OF NEW YORK
DEPARTMENT OF SMALL BUSINESS SERVICES
DIVISION OF LABOR SERVICES
CONTRACT COMPLIANCE UNIT
110 WILLIAMS STREET
NEW YORK, NEW YORK 10038
PHONE: (212) 513-6323
FAX: (212) 618-8879

CONSTRUCTION

EMPLOYMENT

REPORT

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 INSTRUCTIONS

WHO MUST FILE A CONSTRUCTION EMPLOYMENT REPORT

A Construction Employment Report (ER) must be filed if you meet the following conditions:

CONTRACT FUNDING SOURCE	CONTRACTOR	CONTRACT VALUE	SUBMISSION REQUIREMENT
Federal/Federally assisted	Prime and subcontractors	$10,000 or greater	Construction Employment Report
City and state funded	Prime contractor	$1,000,000 or greater	
	Subcontractor	$750,000 or greater	
		Less than $750,000	Less than $750,000 Certificate (City/State Only)

Prime Contractor:

- A general contractor or construction manager selected to perform work on a construction project funded (in whole or in part) by the federal government with a proposed contract value of $10,000 or more.
- A general contractor or construction manager selected to perform work on a construction project funded or assisted by the City of New York with a proposed contract value of $1,000,000 or more.

Subcontractor:

- A subcontractor selected to perform work on a construction project funded (in whole or in part) by the federal government with a proposed contract value of $10,000 or more.
- A subcontractor selected to perform work on a construction project funded or assisted by the City of New York with a proposed contract value of $750,000 or more.
- A subcontractor selected to perform work on a construction project funded or assisted by the City of New York with a proposed contract value of less than $750,000 must submit a "Less than $750,000" certificate.

WHERE TO FILE

Employment Reports must be filed with the City agency awarding the contract. If you are a contractor or subcontractor who will be working for a private developer in receipt of funding or assistance from the City, the ER must be filed with the City agency with jurisdiction over the developer's project.

DLS REVIEW PROCESS

In accordance with Executive Order 50 (EO 50), upon receipt by DLS of a completed ER, DLS conducts a review of the contractor's current employment policies, practices and procedures, as well as perform a statistical analysis of the contractor's workforce, if necessary. The process is as follows:

1. Within five (5) business days, DLS will review the ER for completeness and accuracy. If any information is omitted or incorrect, or if necessary documents are not submitted, the submission shall be deemed incomplete and DLS will inform the contractor. The substantive compliance review does not commence until the submission is complete. **An incomplete submission will delay the review process and may preclude or interrupt the contract approval.**

2. If the ER submission is complete, the compliance review will proceed, resulting in one of the following:

   Certificate of Approval
   The contractor is found to be in compliance with all applicable laws and regulations. The approval is valid for 36 months.

   Continued Approval Certificate
   The contractor has been issued a Certificate of Approval in the previous 36 months which is good for the applicable contract.

   Conditional Certificate of Compliance
   The contractor is required to take corrective actions in order to be in compliance with EO 50. The contractor must meet the conditions within one month of the issue of the Conditional Certificate.

   Determination of Nonperformance
   The contractor has failed to take the required corrective actions stipulated in the Conditional Certificate. A determination of nonperformance may prevent a contractor from receiving an award of a contract.

HOW TO COMPLETE THE EMPLOYMENT REPORT

Contents

General Information
Part I: Contractor/Subcontractor Information
Part II: Employment Policies and Practices
Part III: Contract Bid Information and Projected and Current Workforce Forms
Signature Page

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

Questions 7 – 11: Please provide the required contact information for your company. All contracts must have a designated Equal Employment Officer.

Question 12: If you are a subcontractor, you must state the name of the contractor for whom you are providing the construction services.

Question 13: Please provide the number of permanent employees in your company.

Question 14a-g: The Project Identification Number (PIN) and the Contract Registration ID Number (CT#) can be obtained from the City agency. Provide a description of the trade work you will perform on this project and the address where the work will be performed. Subcontractors can obtain this information from the contract they have with the prime contractor.

Questions 15 – 18: If your company has received a valid Certificate of Approval within the past 36 months, been audited by the United States Department of Labor, Office of Federal Contract Compliance Programs (OFCCP), or if your company has submitted an ER for a different contract for which you have not yet received a compliance certificate, then you only need to complete and submit the following:

- General Information section
- Part I - Contractor/Subcontractor Information
- Form B - Projected Workforce
- Signature Page

If your company is currently waiting for an approval on another contract previously submitted, be certain to identify the date on which you submitted the completed Employment Report, the name of the City contracting agency with which the contract was made, and the name and telephone number of the person to whom the Employment Report was submitted.

If your company was issued a Conditional Certificate of Approval, all required corrective actions must have been taken or DLS will not issue a Continued Certificate.

Question 18: If the company was audited by the OFCCP, also provide the following:

- Identify the reviewing OFCCP office by its name and address
- If an unconditional certificate of compliance was issued by the OFCCP, attach a copy of the certificate in lieu of completing Parts II and III;
- Include copies of all corrective actions and documentation of OFCCP's performance; and
- Provide a copy of all stated OFCCP findings.

Question 19: Please provide a copy of any Collective Bargaining Agreement(s) which is negotiated through an employer trade association on behalf of your organization or any of its affiliates.

PART II: EMPLOYMENT POLICIES AND PRACTICES

Remember to label all documents with the question number for which they are submitted.

Questions 20a – j: You must respond to the questions as to whether or not your firm has documents reflecting written policies, benefits and procedures. If so, then you must identify by name each document in which the policy(ies), procedure(s) and benefit(s) is located and submit copies of all of the document(s). If your firm follows unwritten practices or procedures, include an explanation of how they operate. Please submit the most current document(s), including all applicable amendments. Label each document and/or unwritten practice according to the question to which it corresponds (e.g. 20a, 20b, etc.)

Questions 21a – h: Inquires about the manner/methods by which you comply with the requirements of the Immigration Reform and Control Act of 1986 (IRCA).

Question 22: Inquires into where and how I-9 forms are maintained and stored.

Questions 23a – e: Inquires into whether or not there is a requirement that an applicant or employee be subjected to a medical examination at any given time. Copes of the medical information questionnaire and instructions must be submitted with the Employment Report.

Question 24: Indicate the existence and location of all statements of your firm's Equal Employment Opportunity policy and attach a copy of each statement.

Question 25: Submit any current Affirmative Action Plan(s) created pursuant to Executive Order 11246.

Question 26: If your firm or collective bargaining agreement has an internal grievance procedure, indicate this and submit a copy of the policy and procedure. If unwritten, explain its nature and operation. Explain how your firm's procedure addresses EEO complaints.

Question 27: If your employees have used the procedure in the last three (3) years, please submit an explanation in the format indicated below:

1. Number of complaint(s)	2. Nature of the complaint(s)	3. Position(s) of the complainant(s)	4. Was an investigation conducted? Y/N	5. Current status of the disposition

Question 28: Indicate whether in the past three (3) years complaints have been filed with a court of law or administrative agency, naming your company as a defendant (or respondent) in a complaint alleging violation of any anti-discrimination or affirmative action laws. If yes, develop and submit a log to show, for each administrative/and or judicial action filed, the following information:

1. Name(s) of complainant(s)	2. Administrative agency or court in which action was filed	3. Nature of the complaint(s)	4. Current status	5. If not pending, the complaint's disposition

Question 29: Identify each job for which a physical qualification exists. Identify and explain the physical qualification(s) for each stated job. Submit job descriptions for each job and the reasons for the qualifications.

Question 30: Identify each job for which there exists any qualification related to age, race, color, national origin, sex, creed, disability, marital status, sexual orientation or citizenship status. Identify and explain the specific related qualification for each job stated. Submit job descriptions for each job and the reasons for the qualifications.

PART III: CONTRACT BID INFORMATION AND PROJECTED AND CURRENT WORKFORCE FORMS

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

Your projections for the utilization of subcontractors on the proposed contract are to be provided in this section. A chart has been provided for the identification of subcontractors. Information is to be provided to the extent known at the time the ER is filed for review by DLS. If the subcontractor's name is unknown, then write "unknown". Under "ownership", enter the appropriate race/ethnic and gender code. If the contract is federally funded or assisted and the subcontractor is being utilized in accordance with applicable federal requirements with respect to Minority Business Enterprise or Woman Business Enterprise requirements, enter the appropriate code. This will also apply to state funded contracts with similar requirements for minority and female owned businesses.

FORM B: PROJECTED WORKFORCE FOR WORK TO BE PERFORMED ON THIS PROJECT

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

FORM C: CURRENT WORKFORCE FOR WORK TO BE PERFORMED ON THIS PROJECT

For each trade *currently* engaged by your company for all work performed in NYC, enter the current workforce for Males and Females by trade classification in the charts provided.

SIGNATURE PAGE

The signatory of this Employment Report and all other documents submitted to DLS must be an official authorized to enter into a binding legal agreement. The signature page must be completed in its entirety and notarized. Only original signatures will be accepted.

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 xx Subcontractor ___

1a. Are M/WBE goals attached to this project? Yes xx 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
___Women Owned Business Enterprise
___Disadvantaged Business Enterprise
___Locally Based Business Enterprise
___Emerging Business Enterprise

2a. If you are certified as an **MBE, WBE, LBE, EBE** or **DBE**, what city/state agency are you certified with? Not Applicable Are you DBE certified? Yes ____ No xx

3. Please indicate if you would like assistance from SBS in identifying certified M/WBEs for contracting opportunities: Yes___ No xx

4. Is this project subject to a project labor agreement? Yes ____ No xx

5. Are you a Union contractor? Yes xx No ____ If yes, please list which local(s) you affiliated with *See attached "Union Affiliation Listing"

6. Are you a Veteran owned company? Yes ____ No xx

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

7. 22-3131714 — Employer Identification Number or Federal Tax I.D.
engineering@northeastremsco.com — Email Address

8. Northeast Remsco Construction, Inc.
Company Name

9. 1433 Route 34 South, B1, Farmingdale, NJ 07727
Company Address and Zip Code

10. Rolando E. Acosta — Chief Operating Officer
732-557-6100 — Telephone Number

11. Marcelo R. Afonso — Designated Equal Opportunity Compliance Officer (If same as Item #10, write "same")
732-557-6100 — Telephone Number

12. ~SAME as above, Rolando E. Acosta
Name of Prime Contractor and Contact Person (If same as Item #8, write "same")

13. Number of employees in your company: 250 +/-

14. Contract information:

(a) NYC Dept. of Design & Construction
Contracting Agency (City Agency)

(b) $26,294,361.50
Contract Amount

(c) C
Procurement Identification Number (PIN)

(d) _____
Contract Registration Number (CT#)

(e) To be Determined
Projected Commencement Date

(f) Within _____ days of NTP
Projected Completion Date

(g) Description and location of proposed contract:

_____

_____

15. Has your firm been reviewed by the Division of Labor Services (DLS) within the past 36 months and issued a Certificate of Approval? Yes XX No___

If yes, attach a copy of certificate.

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

If yes, attach a copy of certificate.

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

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

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

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

If yes,

(a) Name and address of OFCCP office.

_____

_____

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

If yes, attach a copy of such certificate.

(c) Were any corrective actions required or agreed to? Yes___ No___

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

(d) Were any deficiencies found? Yes___ No___

If yes, attach a copy of such findings.

19. Is your company or its affiliates a member or members of an employers' trade association which is responsible for negotiating collective bargaining agreements (CBA) which affect construction site hiring? Yes XX No___ *See attached "CBA Front Pages"

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

PART II: DOCUMENTS REQUIRED

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

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

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

N (c) Employee Policy/Handbook

N (d) Personnel Policy/Manual

N (e) Supervisor's Policy/Manual

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

Y (g) Collective bargaining agreement(s).

Y (h) Employment Application(s)

N (i) Employee evaluation policy/form(s).

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

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

(a) Prior to job offer	Yes___	No XX
(b) After a conditional job offer	Yes___	No XX
(c) After a job offer	Yes XX	No___
(d) Within the first three days on the job	Yes___	No XX
(e) To some applicants	Yes___	No XX
(f) To all applicants	Yes___	No XX
(g) To some employees	Yes___	No XX
(h) To all employees	Yes XX	No___

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

I-9 Forms are kept in the main office in Farmingdale, separate from employment records.

23. 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.

24. 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.

*See attached "EEO/AA Policy" - Policy can be found at the main office in Farmingdale and on the job-site.

25. Does the company have a current affirmative action plan(s) (AAP) ***NO

_____Minorities and Women
_____Individuals with handicaps
_____Other. Please specify _____

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

*See attached "Grievance Policies"

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

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

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

If yes, attach a log. See instructions.

29. 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).

_____

_____

30. Are there any jobs for which there are age, race, color, national origin, sex, creed, disability, marital status, sexual orientation, or citizenship qualifications? Yes___ No 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) Rolando E. Acosta 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.

Northeast Remsco Construction, Inc.
Contractor's Name

Jodi Buckman — Contracts Administrator
Name of person who prepared this Employment Report — Title

Rolando E. Acosta — President
Name of official authorized to sign on behalf of the contractor — Title

732-557-6100
Telephone Number

Signature of authorized official — 03/03/17 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/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 3RD day of MARCH 20 17

Notary Public — Authorized Signature — Date

JODI BUCKMAN NOTARY PUBLIC NEW JERSEY MY COMMISSION EXPIRES 06/20/2021 NOTARY NO 2276324

FOR OFFICIAL USE ONLY: File No.

FORM C: CURRENT WORKFORCE

TRADE CLASSIFICATION CODES

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

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

Trade: LABORERS

Union Affiliation, if applicable: 731

Total (Col. #1-10): 13

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10): 6

Total Female (Col. #6 – 10): 0

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	7	2	4	0	0	0	0	0	0	0
H										
A										
TRN										
TOT	7	2	4	0	0	0	0	0	0	0

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

UNION 731

FOR OFFICIAL USE ONLY: File No.

FORM C: CURRENT WORKFORCE

Trade: OPERATING ENGINEERS

Union Affiliation, if applicable: 14

Total (Col. #1-10): 1

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10): 0

Total Female (Col. #6 – 10): 0

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	1	0	0	0	0	0	0	0	0	0
H										
A										
TRN										
TOT	1	0	0	0	0	0	0	0	0	0

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

UNION 14

FORM C: CURRENT WORKFORCE

Trade:
OPERATING ENGINEERS

Union Affiliation, if applicable
15

Total (Col. #1-10):
2

Total Minority, Male & Female
(Col. #2,3,4,5,7,8,9, & 10):
1

Total Female
(Col. #6 – 10):
0

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	1	1	0	0	0	0	0	0	0	0
H										
A										
TRN										
TOT	1	1	0	0	0	0	0	0	0	0

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

UNION 15

FORM C: CURRENT WORKFORCE

Trade: SAND HOG

Union Affiliation, if applicable: 147

Total (Col. #1-10): 1

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10): 0

Total Female (Col. #6 – 10): 0

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	1	0	0	0	0	0	0	0	0	0
H										
A										
TRN										
TOT	1	0	0	0	0	0	0	0	0	0

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

UNION 147

FOR OFFICIAL USE ONLY: File No._____

FORM C: CURRENT WORKFORCE

Trade:
CARPENTARS

Union Affiliation, if applicable
926

Total (Col. #1-10):
2

Total Minority, Male & Female
(Col. #2,3,4,5,7,8,9, & 10):
0

Total Female
(Col. #6 – 10):
0

	MALES					FEMALES				
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	2	0	0	0	0	0	0	0	0	0
H										
A										
TRN										
TOT	2	0	0	0	0	0	0	0	0	0

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?
UNION 926

FOR OFFICIAL USE ONLY: File No._____

FORM C: CURRENT WORKFORCE

Trade:
MILLWRIGHTS

Union Affiliation, if applicable
740

Total (Col. #1-10):
4

Total Minority, Male & Female (Col. #2,3,4,5,7,8,9, & 10):
1

Total Female (Col. #6 – 10):
0

MALES

	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.
J	3	1	0	0	0
H					
A					
TRN					
TOT	3	1	0	0	0

FEMALES

	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J	0	0	0	0	0
H					
A					
TRN					
TOT	0	0	0	0	0

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?
UNION 740

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

Date _____ File Number _____

LESS THAN $750,000 SUBCONTRACT CERTIFICATE
(CITY, STATE AND ICIP ONLY)

Are you currently certified as one of the following? Please check yes or no:

MBE Yes ___No ___ WBE Yes ___No ___ LBE Yes ___No ___

DBE Yes___No___ EBE Yes ___ No ___

If you are certified as an MBE, WBE, LBE, EBE or DBE, what city/state agency are you certified with?

_____

Please check one of the following if your firm would like information on how to certify with the City of New York as a:

___Minority Owned Business Enterprise ___Locally based Business Enterprise

___Women Owned Business Enterprise ___Emerging Business Enterprise

___Disadvantaged Business Enterprise

_____
Company Name Employer Identification Number or Federal Tax I.D

_____
Company Address and Zip Code

_____
Contact Person (First Name, Last Name) Telephone Number

_____
Fax Number E-mail Address

Description and location of proposed subcontract: _____
_____
_____

Are you a Union contractor? Yes ____ No ____ If yes, please list which local(s) you affiliated with

_____

Are you a Veteran owned company? Yes ____ No ____

_____ _____
Procurement Identification Number (PIN) Contract Registration Number (CT#)
(City contracts only) (City contracts only)

Revised 8/13
FOR OFFICIAL USE ONLY: File No._____

Block and Lot Number
(ICIP projects only)

Contract Amount

I, (print name of authorized official signing)_____ hereby certify that I am authorized by the above-named subcontractor to certify that said subcontractor's proposed contract with the above named owner or City agency is less than $750,000. This affirmation is made in accordance with NYC Charter Chapter 56, Executive Order No. 50 (1980) and the implementing Rules.

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/and or criminal prosecution.

Signature of authorized official

Date

Only original signatures accepted.

Sworn to before me this _____ day of _____ 20 _____

Notary Public

Authorized Signature

Date

Revised 8/13

FOR OFFICIAL USE ONLY: File No._____

ATTACH TO CONTRACT DOCUMENTS

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

ADDENDUM NO. 1

DATED: February 24, 2017

THIS ADDENDUM IS HEREBY MADE A PART OF THE CONTRACT DOCUMENTS

1. **Refer** to the Bid and Contract Documents, VOLUME 1 OF 3, Attachment 1 – Bid Information on Page A-1;
   Change the percentage shown for Performance and Payment Security from "**30**" to read "**100%**".

2. **Refer** to the Bid and Contract Documents, VOLUME 3 OF 3, I-PAGES Page I-6;
   Delete Page I-6 (Section 8.53 WFR)
   Substitute the revised attached pages I-6-R and I-6A-R (Revised Section 8.53 WFR)

2. **Refer** to the Contract Drawings, Sheet 7 of 26, Note No. 4;
   Delete Note No. 4. ("MINIMUM STAGING AREA ... IN THE CONTRACT.")
   Substitute the revised Note No. 4:

   "MINIMUM STAGING AREA FOR THE ENTRANCE AND EXIT SITE IS SHOWN ON PLANS. IF THE CONTRACTOR NEEDS A LARGER STAGING AREA FOR LAYING DOWN AND STORING MATERIALS, DUE TO THE CONTRACTOR'S MEANS AND METHODS, THE COST FOR ADDITIONAL STAGING AREA ON PRIVATE PROPERTY SHALL BE PAID FOR UNDER ITEM 8.53 WFR."

(NO FURTHER TEXT THIS PAGE)

END OF ADDENDUM NO. 1

By signing in the space provided below, the bidder acknowledges receipt of this Addendum consisting of TWO (2) pages and TWO (2) pages of attachments.

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

PURNIMA DHARIA, P.E.
Assistant Commissioner / Design I

NORTHEAST REMSCO CONST. INC.
Name of Bidder

By: X
ROLANDO E. ACOSTA, PRES

NORTHEAST REMSCO CONSTRUCTION INC. CORPORATE SEAL 1991 NEW JERSEY

HED564

ATTACH TO CONTRACT DOCUMENTS

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

ADDENDUM NO. 2

DATED: February 27, 2017

THIS ADDENDUM IS HEREBY MADE A PART OF THE CONTRACT DOCUMENTS

1. **Refer** to the Bid and Contract Documents, VOLUME 1 OF 3;
   Delete BID SCHEDULE Pages B-1 through B-28;
   Insert attached Bid Schedule pages B-1-R, B-2-R and B-3 [REVISION #1] through B-28 [REVISION #1]
   NOTE: Sequence 120, Item 8.53 WFR fixed amount was revised.

END OF ADDENDUM NO. 2

By signing in the space provided below, the bidder acknowledges receipt of this Addendum consisting of ONE (1) page and TWENTY-EIGHT (28) pages of attachments.

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

Purnima Dharia

PURNIMA DHARIA, P.E.
Assistant Commissioner / Design I

NORTHEAST REMSCO CONST. INC.
Name of Bidder

By: X

ROLANDO E. ACOSTA, PRES

NORTHEAST REMSCO CONSTRUCTION INC. CORPORATE SEAL 1991 NEW JERSEY

ATTACH TO CONTRACT DOCUMENTS

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

ADDENDUM NO. 3

DATED: February 28, 2017

THIS ADDENDUM IS HEREBY MADE A PART OF THE CONTRACT DOCUMENTS

1. **Refer** to the Bid and Contract Documents, VOLUME 1 OF 3, BID BOOKLET;
   Delete page 3a;
   Insert attached BID BOOKLET page 3a-R.
   NOTE: Horizontal Directional Drilling Special Experience requirement was revised.

2. **Refer** to the Bid and Contract Documents, VOLUME 3 OF 3, SW-PAGES;
   Delete page SW-16;
   Insert attached page SW-16-R.
   NOTE: Horizontal Directional Drilling Special Experience requirement was revised.

3. For additional information, see the attached one (1) page of "Questions Submitted by Bidders and DDC's Responses".

END OF ADDENDUM NO. 3

By signing in the space provided below, the bidder acknowledges receipt of this Addendum consisting of ONE (1) page and THREE (3) pages of attachments.

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

Purnima Dharia
PURNIMA DHARIA, P.E.
Assistant Commissioner / Design I

NORTHEAST REMSCO CONST. INC.
Name of Bidder

BY: [signature]
ROLANDO E. ACOSTA, PRES.

NORTHEAST REMSCO CONSTRUCTION, INC. CORPORATE SEAL 1991 NEW JERSEY

Qualification Form

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 the Project completed or the Project in progress: _____
_____
_____

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: _____

Amount of Contract, Subcontract or Sub-subcontract: _____

Start Date and Completion Date: _____

****

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 the Project completed or the Project in progress: _____
_____
_____

Was the Project performed as a prime, a subcontractor or a sub-subcontractor: _____

Amount of Contract, Subcontract or Sub-subcontract: _____

Start Date and Completion Date: _____

(NO TEXT ON THIS PAGE)

BID SCHEDULE

The following pages contain the Bid Schedule. Items listed in the Bid Schedule shall comply with the requirements of the specifications detailed in the table below. All references to the Standard Specifications, Details, Standards, and Drawings shall be to the version in effect at the time of bid.

Item Number Format	Specification
4.XXX 6.XXX 7.XXX 8.XXX *(Except 8.01 XXX)* 9.XXX	NYC DOT Standard Highway Specifications, as amended in the R-Pages, located in Volume 3 of 3 ***AND*** NYC DOT Standard Highway Details ***OR, if the item is not contained within the Standard Specifications,*** Special Specification in the I-Pages, located in Volume 3 of 3.
1.XXX 50.XXX thru 55.XXX 60.XXX thru 67.XXX 70.XXX thru 79.XXX DSS XXX DSW XXX	NYC DEP Standard Sewer and Water Main Specifications, as amended in the R-Pages and SW-Pages, located in Volume 3 of 3 ***AND*** NYC DOT Specifications for Trunk Main Work ***AND*** NYC DOT Sewer Design Standards ***AND*** NYC DOT Water Main Standard Drawings ***OR, if the item is not contained within the Standard Specifications,*** Special Specification in the SW-Pages, located in Volume 3 of 3.
8.01 XXX	Special Specification in the HAZ-Pages, located in Volume 3 of 3.
BMP-XXX	Special Specification in the BMP-Pages, located in Volume 3 of 3.
E XXX ME XXX	Special Specification in the EL-Pages, located in Volume 3 of 3.
GI-XXX PM-XXX ROW XXX	Special Specification in the I-Pages, located in Volume 3 of 3 ***AND*** NYC DEP Standards for Green Infrastructure.
JB XXX	Special Specification in the JB-Pages, located in Volume 3 of 3.

BID SCHEDULE

Item Number Format	Specification
83X.XXX HW-XXX MX.XXX MP XXX NYC-XXX NYCT-XXX NYPD-XXX P XXX PK-XXX	Special Specification in the I-Pages, located in Volume 3 of 3.
SL-XXX	NYC DOT Division of Street Lighting Specifications ***AND*** NYC Division of Street Lighting Standard Drawings
T-XXX	NYC DOT Standard Specifications for Traffic Signals ***AND*** NYC DOT Standard Drawings for Traffic Signals
UTL-XXX	Special Specification in the EP7-Pages, located in Volume 3 of 3.

NOTES:

- "XXX" signifies any possible combination of characters and spaces.
- The table may contain item formats which are not included in the Bid Schedule.

(NO FURTHER TEXT THIS PAGE)

BID SCHEDULE

NOTE: (1) The Agency may reject a bid if it contains unbalanced bid prices. An unbalanced bid is considered to be one containing lump sum or unit items which do not reflect reasonable actual costs plus a reasonable proportionate share of the Bidder's anticipated profit, overhead costs, and other indirect costs, anticipated for the performance of the items in question.

(2) The following bid prices on Unit Price Contracts are to be paid for the actual quantities of the item numbers in the completed work or structure, and they cover the cost of all work, labor, material, tools, plant and appliances of every description necessary to complete the entire work, as specified, and the removal of all debris, temporary work and appliances.

(3) PLEASE BE SURE A LEGIBLE BID IS ENTERED, IN INK, FOR EACH ITEM.
Alterations must be initialed in ink by the bidder.

(4) The Extended Amount entered in Column 6 shall be the product of the Estimated Quantity in Column 3 times the Unit Price Bid in Column 5.

(5) Prospective bidders must examine the Bid Schedule carefully and, before bidding, must advise the Commissioner, in writing, if any pages are missing, and must request that such missing pages be furnished them. The pages of this Bid Schedule are numbered consecutively, as follows:
B - 3 Through B - 28

PLEASE BE SURE A LEGIBLE BID IS ENTERED FOR EACH ITEM.
THE BIDDER SHALL INSERT THE TOTAL BID PRICE IN
THE BID FORM ON PAGE C-4 OF THIS BID BOOKLET.

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
001	**4.02 AB-R** ASPHALTIC CONCRETE WEARING COURSE, 1-1/2" THICK	1,350.00	S.Y.				
002	**4.02 AF-R** ASPHALTIC CONCRETE WEARING COURSE, 2" THICK	700.00	S.Y.				
003	**4.02 CA** BINDER MIXTURE	825.00	TONS				
004	**4.04 H** CONCRETE BASE FOR PAVEMENT, VARIABLE THICKNESS FOR TRENCH RESTORATION, (HIGH-EARLY STRENGTH)	215.00	C.Y.				
005	**4.08 AA** CONCRETE CURB (18" DEEP)	450.00	L.F.				
006	**4.13 AAS** 4" CONCRETE SIDEWALK (UNPIGMENTED)	3,250.00	S.F.				

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
007	**4.13 BAS** 7" CONCRETE SIDEWALK (UNPIGMENTED)	350.00	S.F.				
008	**4.16 AA** TREES REMOVED (4" TO UNDER 12" CALIPER)	48.00	EACH				
009	**4.16 AB** TREES REMOVED (12" TO UNDER 18" CALIPER)	3.00	EACH				
010	**4.16 AC** TREES REMOVED (18" TO UNDER 24" CALIPER)	2.00	EACH				
011	**4.16 AD** TREES REMOVED (24" CALIPER AND OVER)	2.00	EACH				
012	**4.16 BA** TREES PLANTED, 2-1/2" TO 3" CALIPER, ALL TYPES	135.00	EACH				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
013	4.18 A MAINTENANCE TREE PRUNING (UNDER 12" CAL.)	15.00	EACH				
014	4.18 B MAINTENANCE TREE PRUNING (12" TO UNDER 18" CAL.)	20.00	EACH				
015	4.18 C MAINTENANCE TREE PRUNING (18" TO UNDER 24" CAL.)	10.00	EACH				
016	4.18 D MAINTENANCE TREE PRUNING (24" CAL. AND OVER)	10.00	EACH				
017	4.20 SEEDING	4,000.00	S.Y.				
018	4.21 TREE CONSULTANT	750.00	P/HR				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
019	**50.21M3C024D** 24" R.C.P. CLASS III STORM SEWER, ON CONCRETE CRADLE	20.00	L.F.				
020	**50.21M3E024D** 24" R.C.P. CLASS III STORM SEWER, ENCASED IN CONCRETE	16.00	L.F.				
021	**50.31MC12** 12" E.S.V.P. STORM SEWER, ON CONCRETE CRADLE	31.00	L.F.				
022	**50.31MC18** 18" E.S.V.P. STORM SEWER, ON CONCRETE CRADLE	25.00	L.F.				
023	**51.11P004** STANDARD 4'-0" DIAMETER PRECAST MANHOLE	3.00	EACH				
024	**51.11P006** STANDARD 6'-0" DIAMETER PRECAST MANHOLE	1.00	EACH				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
025	51.41S001 STANDARD CATCH BASIN, TYPE 1	4.00	EACH				
026	51.61F000 OUTFALL	1.00	EACH				
027	52.11D12 12" DUCTILE IRON PIPE BASIN CONNECTION	80.00	L.F.				
028	53.11DR TELEVISION INSPECTION AND DIGITAL AUDIO-VISUAL RECORDING OF SEWERS	150.00	L.F.				
029	6.01 AC CLEARING AND GRUBBING	3,500.00	S.Y.				
030	6.02 AAN UNCLASSIFIED EXCAVATION	600.00	C.Y.				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
031	6.02 PA PNEUMATIC EXCAVATION AROUND TREES	10.00	C.Y.				
032	6.25 RS TEMPORARY SIGNS	850.00	S.F.				
033	6.26 TIMBER CURB	700.00	L.F.				
034	6.28 AA LIGHTED TIMBER BARRICADES	150.00	L.F.				
035	6.30 AA BEAM TYPE GUIDE RAIL	400.00	L.F.				
036	6.30 AR REMOVE EXISTING GUIDE RAIL	400.00	L.F.				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
037	6.34 AB CHAIN LINK FENCE, 4'-0" HIGH	50.00	L.F.				
038	6.34 BD CHAIN LINK FENCE GATE FOR 8'-0" HIGH FENCE	200.00	L.F.				
039	6.34 X REMOVE AND DISPOSE OF EXISTING CHAIN LINK FENCE	250.00	L.F.				
040	6.40 D ENGINEER'S FIELD OFFICE (TYPE D)	36.00	MONTH				
041	6.44 THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS (4" WIDE)	4,000.00	L.F.				
042	6.49 TEMPORARY PAVEMENT MARKINGS (4" WIDE)	1,600.00	L.F.				

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
043	6.53 REMOVE EXISTING LANE MARKINGS (4" WIDE)	3,000.00	L.F.				
044	6.68 PLASTIC FILTER FABRIC	115.00	S.Y.				
045	6.84 B LOLLIPOP TYPE BUS STOP SIGNS PRICE BID SHALL BE FOR THE FIXED SUM OF $ 5,000.00	1.00	F.S.	5,000	00	$5,000	00
046	6.87 PLASTIC BARRELS	870.00	EACH				
047	60.11R520 FURNISHING AND DELIVERING 20-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 55)	910.00	L.F.				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
048	**60.11R524** FURNISHING AND DELIVERING 24-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 55)	80.00	L.F.				
049	**60.11R606** FURNISHING AND DELIVERING 6-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	185.00	L.F.				
050	**60.11R608** FURNISHING AND DELIVERING 8-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	50.00	L.F.				
051	**60.11R610** FURNISHING AND DELIVERING 10-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	30.00	L.F.				
052	**60.11R612** FURNISHING AND DELIVERING 12-INCH DUCTILE IRON RESTRAINED JOINT PIPE (CLASS 56)	1,140.00	L.F.				
053	**60.12D06** LAYING 6-INCH DUCTILE IRON PIPE AND FITTINGS	220.00	L.F.				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5 UNIT PRICE (IN FIGURES)		COL. 6 EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	ENGINEER'S ESTIMATE OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
054	60.12D08 LAYING 8-INCH DUCTILE IRON PIPE AND FITTINGS	60.00	L.F.				
055	60.12D10 LAYING 10-INCH DUCTILE IRON PIPE AND FITTINGS	40.00	L.F.				
056	60.12D12 LAYING 12-INCH DUCTILE IRON PIPE AND FITTINGS	1,200.00	L.F.				
057	60.12D20 LAYING 20-INCH DUCTILE IRON PIPE AND FITTINGS	750.00	L.F.				
058	60.12D24 LAYING 24-INCH DUCTILE IRON PIPE AND FITTINGS	85.00	L.F.				
059	60.13M0A24 FURNISHING AND DELIVERING DUCTILE IRON MECHANICAL JOINT 24 -INCH DIAMETER AND SMALLER FITTINGS, INCLUDING WEDGE TYPE RETAINER GLANDS	17.50	TONS				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5 UNIT PRICE (IN FIGURES)		COL. 6 EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	ENGINEER'S ESTIMATE OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
060	**60.32D20532** 20-INCH DUCTILE IRON PIPE CLASS 55 WATER MAIN IN HORIZONTAL DIRECTIONAL DRILLED 32-INCH STEEL SLEEVE	1.00	L.S.				
061	**61.11DMM06** FURNISHING AND DELIVERING 6-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	9.00	EACH				
062	**61.11DMM12** FURNISHING AND DELIVERING 12-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	3.00	EACH				
063	**61.11DMM20** FURNISHING AND DELIVERING 20-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	6.00	EACH				
064	**61.11TWC03** FURNISHING AND DELIVERING 3-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
065	**61.11TWC04** FURNISHING AND DELIVERING 4-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH				
066	**61.12DMM06** SETTING 6-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	9.00	EACH				
067	**61.12DMM12** SETTING 12-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	3.00	EACH				
068	**61.12DMM20** SETTING 20-INCH MECHANICAL JOINT DUCTILE IRON GATE VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	6.00	EACH				
069	**61.12TWC03** SETTING 3-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH				
070	**61.12TWC04** SETTING 4-INCH WET CONNECTION TAPPING VALVE COMPLETE WITH WEDGE TYPE RETAINER GLANDS	1.00	EACH				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
071	62.11SD FURNISHING AND DELIVERING HYDRANTS	9.00	EACH				
072	62.12SG SETTING HYDRANTS COMPLETE WITH WEDGE TYPE RETAINER GLANDS	9.00	EACH				
073	62.13RH REMOVING HYDRANTS	9.00	EACH				
074	62.14FS FURNISHING, DELIVERING AND INSTALLING HYDRANT FENDERS	18.00	EACH				
075	63.11VC FURNISHING AND DELIVERING VARIOUS CASTINGS	14.50	TONS				
076	64.11EL WITHDRAWING AND REPLACING HOUSE SERVICES USING 1-1/2-INCH OR LARGER SCREW TAPS	9.00	EACH				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
077	**64.11ST** WITHDRAWING AND REPLACING HOUSE SERVICES USING SMALLER THAN 1-1/2-INCH SCREW TAPS	4.00	EACH				
078	**64.12COEG** CUTTING AND OFFSETTING HOUSE SERVICE WATER CONNECTIONS (EQUAL TO OR GREATER THAN 3-INCH DIAMETER)	30.00	L.F.				
079	**64.12COLT** CUTTING AND OFFSETTING HOUSE SERVICE WATER CONNECTIONS (LESS THAN 3-INCH DIAMETER)	30.00	L.F.				
080	**64.12ESEG** EXTENDING HOUSE SERVICE WATER CONNECTIONS (EQUAL TO OR GREATER THAN 3-INCH DIAMETER)	30.00	L.F.				
081	**64.12ESLT** EXTENDING HOUSE SERVICE WATER CONNECTIONS (LESS THAN 3-INCH DIAMETER)	30.00	L.F.				
082	**64.13WC12** FURNISHING, DELIVERING AND INSTALLING WET CONNECTION SLEEVE ON 12-INCH WATER MAIN PIPE WITH VARIOUS OUTLETS	2.00	EACH				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
083	**65.11BR** FURNISHING, DELIVERING AND INSTALLING BANDS, RODS, WASHERS, ETC., COMPLETE, FOR RESTRAINING JOINTS	250.00	LBS.				
084	**65.21PS** FURNISHING AND PLACING POLYETHYLENE SLEEVE **Unit price bid shall not be less than: $ 0.50**	1,250.00	L.F.				
085	**65.31FF** FURNISHING, DELIVERING AND PLACING FILTER FABRIC **Unit price bid shall not be less than: $ 0.10**	24,000.00	S.F.				
086	**65.71SG** FURNISHING, DELIVERING AND PLACING SCREENED GRAVEL OR SCREENED BROKEN STONE BEDDING	170.00	C.Y.				
087	**7.13 B** MAINTENANCE OF SITE **Unit price bid shall not be less than: $ 8,500.00**	30.00	MONTH				
088	**7.36** PEDESTRIAN STEEL BARRICADES	2,900.00	L.F.				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
089	7.88 AA RODENT INFESTATION SURVEY AND MONITORING **Unit price bid shall not be less than: $ 10,000.00**	1.00	L.S.				
090	7.88 AB RODENT BAIT STATIONS **Unit price bid shall not be less than: $ 60.00**	60.00	EACH				
091	7.88 AC BAITING OF RODENT BAIT STATIONS **Unit price bid shall not be less than: $ 8.50**	35.00	EACH				
092	7.88 AC BAITING OF RODENT BAIT STATIONS **Unit price bid shall not be less than: $ 9.50**	25.00	EACH				
093	7.88 AD WATERBUG BAIT APPLICATIONS **Unit price bid shall not be less than: $ 65.00**	15.00	BLOCK				
094	70.21DK DECKING	300.00	S.Y.				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
095	70.31FN FENCING **Unit price bid shall not be less than: $ 2.00**	2,500.00	L.F.				
096	70.51EO EXCAVATION OF BOULDERS IN OPEN CUT **Unit price bid shall not be less than: $ 75.00**	20.00	C.Y.				
097	70.52ET EXCAVATION OF BOULDERS IN TUNNEL SECTION	100.00	C.Y.				
098	70.61RE ROCK EXCAVATION	15.00	C.Y.				
099	70.71RR RIPRAP	40.00	C.Y.				
100	70.71SB STONE BALLAST **Unit price bid shall not be less than: $ 15.00**	100.00	C.Y.				

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
101	**70.71SP** SLOPE PAVEMENT	40.00	C.Y.				
102	**70.72GS** GROUTED STONE PAVEMENT	20.00	S.Y.				
103	**70.81CB** CLEAN BACKFILL **Unit price bid shall not be less than: $ 15.00**	700.00	C.Y.				
104	**70.91SW12** FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 12-INCH IN DIAMETER AND LESS	12,000.00	S.F.				
105	**70.91SW20** FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 20-INCH IN DIAMETER	9,500.00	S.F.				
106	**72.11HF** HYDRAULIC FILL FOR ABANDONED SEWERS AND WATER MAINS	10.00	C.Y.				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5		COL. 6	
		ENGINEER'S ESTIMATE		UNIT PRICE (IN FIGURES)		EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
107	73.11AB ADDITIONAL BRICK MASONRY **Unit price bid shall not be less than: $ 62.50**	5.00	C.Y.				
108	73.21AC ADDITIONAL CONCRETE **Unit price bid shall not be less than: $ 62.50**	30.00	C.Y.				
109	73.31AE0 ADDITIONAL EARTH EXCAVATION INCLUDING TEST PITS (ALL DEPTHS) **Unit price bid shall not be less than: $ 20.00**	100.00	C.Y.				
110	73.41AG ADDITIONAL SELECT GRANULAR BACKFILL **Unit price bid shall not be less than: $ 15.00**	20.00	C.Y.				
111	73.51AS ADDITIONAL STEEL REINFORCING BARS **Unit price bid shall not be less than: $ 1.00**	3,000.00	LBS.				
112	76.11CR CONSTRUCTION REPORT	1.00	L.S.				

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
113	**8.01 C1** HANDLING, TRANSPORTING AND DISPOSAL OF NON-HAZARDOUS CONTAMINATED SOIL	4,500.00	TONS				
114	**8.01 C2** SAMPLING AND TESTING OF CONTAMINATED/POTENTIALLY HAZARDOUS SOIL FOR DISPOSAL PURPOSES	15.00	SETS				
115	**8.01 H** HANDLING, TRANSPORTING AND DISPOSAL OF HAZARDOUS SOIL	225.00	TONS				
116	**8.01 S** HEALTH AND SAFETY	1.00	L.S.				
117	**8.01 W1** REMOVAL, TREATMENT, AND DISCHARGE/DISPOSAL OF CONTAMINATED WATER	45.00	DAY				
118	**8.01 W2** SAMPLING AND TESTING OF CONTAMINATED WATER	20.00	SETS				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5 UNIT PRICE (IN FIGURES)		COL. 6 EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	ENGINEER'S ESTIMATE OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
119	8.08 VARIABLE MESSAGE BOARD	2.00	EACH				
120	8.53 WFR RETAINING WALL FLAG REPAIRS PRICE BID SHALL BE FOR THE FIXED SUM OF $ 100,000.00	1.00	F.S.	100,000	00	$100,000	00
121	9.99 FLASHING ARROW BOARD	1.00	EACH				
122	BMP-7.09 LICENSED SURVEYOR	2.00	DAY				
123	BMP-7.301 DEBRIS REMOVAL AND DISPOSAL	30.00	C.Y.				

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
124	**BMP-7.307-A** GRADING	24,000.00	S.F.				
125	**BMP-7.401-J** HERBACEOUS PLANTS (PLUGS)	804.00	EACH				
126	**BMP-7.404-A** RESTORATION SPECIALIST	360.00	HRS				
127	**BMP-7.404-B** EROSION AND SEDIMENT CONTROL LICENSED/CERTIFIED PROFESSIONAL	100.00	DAY				
128	**BMP-7.413** TEMPORARY GOOSE EXCLUSION FENCE	336.00	L.F.				
129	**BMP-7.417** DEBRIS EXCLUSION FENCE	130.00	L.F.				

BID SCHEDULE FORM

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5 UNIT PRICE (IN FIGURES)		COL. 6 EXTENDED AMOUNT (IN FIGURES)	
SEQ. NO	ITEM NUMBER and DESCRIPTION	ENGINEER'S ESTIMATE OF QUANTITIY	UNIT	DOLLARS	CTS	DOLLARS	CTS
130	**BMP-7.502** CONSTRUCTION LIMIT FENCE	520.00	L.F.				
131	**BMP-7.504A** SILT FENCE	220.00	L.F.				
132	**BMP-7.509-A** STABILIZED CONSTRUCTION ENTRANCE	2.00	EACH				
133	**BMP-7.510** PORTABLE SEDIMENT TANK	1.00	EACH				
134	**BMP-7.511** STORM DRAIN INLET PROTECTION	3.00	EACH				
135	**BMP-7.516** TURBIDITY CURTAIN	200.00	L.F.				

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES)		COL. 6 EXTENDED AMOUNT (IN FIGURES)	
				DOLLARS	CTS	DOLLARS	CTS
136	**PK-482B** REMOVING AND REINSTALLING EXISTING PLAQUES	1.00	EACH				
137	**UTL-6.01.9** GAS MAIN CROSSING WATER MAIN UP TO 20" IN DIAMETER (S6.01) **Unit price bid shall not be less than: $ 485.00**	4.00	EACH				
138	**UTL-6.03** REMOVAL OF ABANDONED GAS FACILITIES. ALL SIZES. (S6.03) **Unit price bid shall not be less than: $ 15.00**	40.00	L.F.				
139	**UTL-6.05** ADJUST HARDWARE TO GRADE BY RESETTING. (ROAD RECONSTRUCTION.) (S6.05) **Unit price bid shall not be less than: $ 65.00**	5.00	EACH				
140	**UTL-6.06** SPECIAL CARE EXCAVATION AND BACKFILLING (S6.06) **Unit price bid shall not be less than: $ 180.00**	50.00	C.Y.				
141	**UTL-6.07** TEST PITS FOR GAS FACILITIES (S6.07) **Unit price bid shall not be less than: $ 100.00**	30.00	C.Y.				

BID SCHEDULE FORM

COL. 1 SEQ. NO	COL. 2 ITEM NUMBER and DESCRIPTION	COL. 3 ENGINEER'S ESTIMATE OF QUANTITIY	COL. 4 UNIT	COL. 5 UNIT PRICE (IN FIGURES) DOLLARS	CTS	COL. 6 EXTENDED AMOUNT (IN FIGURES) DOLLARS	CTS
142	UTL-GCS-2WS GAS INTERFERENCES AND ACCOMMODATIONS PRICE BID SHALL BE FOR THE FIXED SUM OF $ 30,000.00	1.00	F.S.	30,000	00	$30,000	00

SUB-TOTAL: $ _____

143	6.39 A MOBILIZATION BID PRICE OF MOBILIZATION SHALL NOT EXCEED 4% OF THE ABOVE SUB-TOTAL PRICE.	1.00	L.S.				

TOTAL BID PRICE: $ _____

PLEASE BE SURE A LEGIBLE BID IS ENTERED FOR EACH ITEM.
THE BIDDER SHALL INSERT THE TOTAL BID PRICE IN
THE BID FORM ON PAGE C-4 OF THIS BID BOOKLET.

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

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

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

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: _____ Fax Number: _____

Bidder's E-Mail 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: _____

_____

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 C-6 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 herein shall mean the individual bidder, firm, partnership or corporation executing this bid).

6. Compliance Report

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

The bidder, as an individual, or as a member, partner, director, or officer of the bidder, if the same be a firm, partnership, or corporation, executes this document expressly warranting that he will comply with: (1) the provision of the contract on providing records, Chapter 8.

7. By submission of this bid, the bidder certifies that it now has and will continue to have the financial capability to fully perform the work required for this contract. Any award of this contract will be made in reliance upon such certification. Upon request therefor, the bidder will submit written verification of such financial capability in a form that is acceptable to the department.

8. In accordance with Section 165 of the State Finance Law, the bidder agrees that tropical hardwoods, as defined in Section 165 of the State Finance Law, shall not be utilized in the performance of this Contract, except as the same are permitted by the foregoing provision of law.

9. The bidder has visited and examined the site of the work and has carefully examined the Contract in the form approved by the Corporation Counsel, and will execute the Contract and perform all its items, covenants and conditions, and will provide, furnish and deliver all the work, materials, supplies, tools and appliances for all labor and materials necessary or required for the hereinafter named work, all in strict conformity with the Contract, for the prices set forth in the Bid Schedule:

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

Section V: Vendor Certification and Required Affirmations:

I hereby:

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

(NO TEXT ON THIS PAGE)

BID FORM

PROJECT ID. HED564

TOTAL BID PRICE: In the space provided below, the Bidder shall indicate its Total Bid Price in figures. Such Total Bid Price is set forth on the final page of the Bid Schedule.

TOTAL BID PRICE:
(a/k/a BID PROPOSAL) $_____

BIDDER'S SIGNATURE AND AFFIDAVIT

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

BID FORM (TO BE NOTARIZED)

AFFIDAVIT WHERE BIDDER 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 BIDDER 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 BIDDER 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

PROJECT ID. HED564

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.

(NO TEXT ON THIS PAGE)

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 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 _____ day of _____, _____.

(Seal) _____(L.S.)
Principal

By: _____

(Seal) _____
Surety

By: _____

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 _____ 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

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

(NO TEXT ON THIS PAGE)

Tax ID #: _____ APT E-PIN #: 85017B0068

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

Part I to be completed by contracting agency

Contract Overview

APT E- Pin #	85017B0068	**FMS Project ID#:**	HED564
Project Title/ Agency PIN #	New 20" Sub-Aqueous Water Mains to City Island /8502017WM0014C		
Bid/Proposal Response Date	**MARCH 3, 2017**		
Contracting Agency	Department of Design and Construction		
Agency Address	30-30 Thomson Ave. **City** Long Island City **State** NY **Zip Code** 11101		
Contact Person	Emmanuel K. Charles	**Title**	M/WBE Compliance Analyst
Telephone #	718-391-1450	**Email**	charlesem@ddc.nyc.gov

Project Description *(attach additional pages if necessary)*

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

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

Prime Contract Industry: Construction

Group	Percentage	
Unspecified*	**4%**	
or		
Black American	**UNSPECIFIED***	
Hispanic American	**UNSPECIFIED***	
Asian American	**UNSPECIFIED***	
Women	**UNSPECIFIED***	
Total Participation Goals	**4%**	**Line 1**

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

(NO TEXT ON THIS PAGE)

Tax ID #: _____ APT E-PIN #: 85017B0068w _____

SCHEDULE B - Part II: M/WBE Participation Plan

Part II to be completed by the bidder/proposer.

Please note: For Non-M/WBE Prime Contractors who will NOT subcontract any services and will self-perform the entire contract, you must obtain a FULL waiver by completing the Waiver Application on pages 17 and 18 and timely submitting it to the contracting agency pursuant to the Notice to Prospective Contractors. Once a FULL WAIVER is granted, it must be included with your bid or proposal and you do not have to complete or submit this form with your bid or proposal.

Section I: Prime Contractor Contact Information

Tax ID # _____ **FMS Vendor ID #** _____

Business Name _____ **Contact Person** _____

Address _____

Telephone # _____ **Email** _____

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

PRIME CONTRACTOR ADOPTING AGENCY M/WBE PARTICIPATION GOALS

☐ **For Prime Contractors (including Qualified Joint Ventures and M/WBE firms) adopting Agency M/WBE Participation Goals.**	**Total Bid/Proposal Value**		**Agency Total Participation Goals (Line 1, Page 13)**		**Calculated M/WBE Participation Amount**
Calculate the total dollar value of your total bid that you agree will be awarded to M/WBE subcontractors for services and/or credited to an M/WBE prime contractor or Qualified Joint Venture. Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.	**$**	**X**		**=**	**$ Line 2**

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

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

Tax ID #: _____ APT E-
PIN #: _____

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

☐ As an M/WBE Prime Contractor that will self-perform and/or subcontract to other M/WBE firms a portion of the contract the value of which is at least the amount located on Lines 2 or 3 above, as applicable. The value of any work subcontracted to non-M/WBE firms will not be credited towards fulfillment of M/WBE Participation Goals. Please check all that apply to Prime Contractor:

☐ MBE ☐ WBE

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

☐ As a non M/WBE Prime Contractor that will enter into subcontracts with M/WBE firms the value of which is at least the amount located on Lines 2 or 3 above, as applicable.

Section IV: General Contract Information

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

✓ Scopes of Subcontract Work

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

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____

Tax ID #: _____ APT E-PIN #: _____

Section V: Vendor Certification and Required Affirmations

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

Signature _____ **Date** _____

Print Name _____ **Title** _____

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

Contract Overview

Tax ID # _____ **FMS Vendor ID #** _____

Business Name _____

Contact Name _____ **Telephone #** _____ **Email** _____

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

APT E-PIN # (for this procurement): _____ **Contracting Agency:** _____

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

_____ % **Agency M/WBE Participation Goal**

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

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

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

☐ **Vendor does not subcontract services, and has the capacity and good faith intention to perform all such work itself with its own employees.**

☐ **Vendor subcontracts *some* of this type of work but at a *lower* % than bid/solicitation describes, and has the capacity and good faith intention to do so on this contract. (Attach subcontracting plan outlining services that the vendor will self-perform and subcontract to other vendors or consultants.)**

☐ **Vendor has other legitimate business reasons for proposing the M/WBE Participation Goal above. Explain under separate cover.**

References

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

CONTRACT NO. _____ **AGENCY** _____ **DATE COMPLETED** _____

Total Contract Amount $ _____ **Total Amount Subcontracted** $ _____

Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____

CONTRACT NO. _____ **AGENCY** _____ **DATE COMPLETED** _____

Total Contract Amount $ _____ **Total Amount Subcontracted** $ _____

Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____

CONTRACT NO. **AGENCY** **DATE COMPLETED**

Total Contract Amount $ **Total Amount Subcontracted** $

Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____

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

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

TYPE OF Contract _____ **ENTITY** _____ **DATE COMPLETED** _____

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

Total Contract Amount $ _____ **Total Amount Subcontracted** $ _____

Type of Work Subcontracted _____ _____ _____

_____

TYPE OF Contract _____ **AGENCY/ENTITY** _____ **DATE COMPLETED** _____

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

Total Contract Amount $ _____ **Total Amount Subcontracted** $ _____

Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____

_____

TYPE OF Contract _____ **AGENCY/ENTITY** _____ **DATE COMPLETED** _____

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

Total Contract Amount $ _____ **Total Amount Subcontracted** $ _____

Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____ Item of Work Subcontracted and Value of subcontract _____

_____

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

Signature: _____ **Date:** _____

Print Name: _____ **Title:** _____

Shaded area below is for agency completion only

AGENCY CHIEF CONTRACTING OFFICER APPROVAL

Signature: _____ **Date:** _____

CITY CHIEF PROCUREMENT OFFICER APPROVAL

Signature: _____ **Date:** _____

Waiver Determination

Full Waiver Approved: ☐
Waiver Denied: ☐
Partial Waiver Approved: ☐
Revised Participation Goal:_____%

APPRENTICESHIP PROGRAM REQUIREMENTS

Bidders are advised that the Apprenticeship Program Requirements set forth below apply to each contract for which a check mark is indicated before the word "Yes". Compliance with these requirements will be determined solely by the City.

__√__ YES _____ NO

(1) Apprenticeship Program Requirements

Notice to Bidders: Please be advised that, pursuant to the authority granted to the City under Labor Law Section 816-b, the Department of Design and Construction hereby requires that the contractor awarded a contract as a result of this Invitation for Bids, and any of its subcontractors with subcontracts worth two million dollars or over, have, prior to entering into such contract or subcontract, apprenticeship agreements appropriate for the type and scope of work to be performed that have been registered with, and approved by, the New York State Commissioner of Labor. In addition, the contractor and its subcontractors will be required to show that such apprenticeship program/s have successfully passed the two year Probation period following the initial registration date of such program/s with the New York State Department of Labor.

The failure to prove, upon request, that these requirements have been met shall result in the contract not being awarded to the contractor or the subcontract not being approved.

Please be further advised that, pursuant to Labor Law Section 220, the allowable ratio of apprentices to journeypersons in any craft classification shall not be greater than the ratio permitted to the contractor as to its workforce on any job under the registered apprenticeship program.

(2) Apprenticeship Program Questionnaire

The bidder must submit a completed and signed Apprenticeship Program Questionnaire. The Questionnaire is set forth on the following page of the Bid Booklet.

APPRENTICESHIP PROGRAM QUESTIONNAIRE ("APQ")

Bidder Name: _____

Project ID Number: _____

The Bidder MUST complete, sign, and submit this Apprenticeship Program Questionnaire with its bid.

1. Does the bidder have any Apprenticeship Program agreement(s) appropriate for the type and scope of work to be performed? (Note: Participation may be by either direct sponsorship or through collective bargaining agreement(s).)

   _____YES _____NO

2. Has/have the bidder's Apprenticeship Program agreement(s) been registered with, and approved by the New York State Commissioner of Labor ("NYSDOL Commissioner")?

   _____YES _____NO

3. Has/have the bidder's Apprenticeship Program successfully passed the two-year Probation period following its initial registration with the New York State Department of Labor ("NYSDOL")?

   _____YES _____NO

If the answers to Questions 1, 2, and 3 are "Yes". The bidder shall, in the space below (and/or attached herewith where applicable), provide the contact information for such Apprenticeship Program(s) as well as information demonstrating that such Apprenticeship Program(s) have passed the two-year Probation period following its initial registration with the NYSDOL. (The bidder may attach additional pages if necessary).

- **Where the bidder directly sponsors any such apprenticeship Program(s),** the bidder shall provide the following:
  - The trade classification(s) covered by such program(s), and the date(s) such program(s) was/were approved by the NYSDOL Commissioner; and/or
  - A copy of a letter(s) from the NYSDOL, on NYSDOL's letterhead, executed by an official thereof, which verifies/verify the trade classification(s) covered by such program(s), and the date(s) such program(s) was/were approved by the NYSDOL Commissioner and the Active status of such program(s).

- **Where the bidder participates in any such Apprenticeship Program(s) through its membership in an employer organization(s) that directly sponsors such program(s) or where the employer association(s) participates in such program(s) through collective bargaining,** the bidder shall provide the following:
  - The contact information for the employer organization(s), and the apprenticeable trade(s) covered pursuant to the bidder's affiliation therewith, and the date such program(s) was/were approved by the NYSDOL Commissioner; or
  - A letter(s) from such employer organization(s), on letterhead of such organization(s), executed by an officer, delegate or official thereof, which verifies/verify the trade classification(s) covered by such program(s) was/were approved by the NYSDOL Commissioner, and that the bidder is both a member in good standing of the identified employer organization and is subject to the provisions of the Apprenticeship Program agreement(s) sponsored thereby.

APPRENTICESHIP PROGRAM QUESTIONNAIRE ("APQ")

Project ID Number: _____

- **Where the bidder participates in any such Apprenticeship Programs through collective bargaining agreements,** the bidder shall provide the following:

    - The contact information for such collective bargaining entity(ies) and the apprenticeable trade(s) covered pursuant to the bidder's affiliation therewith;
    - A letter(s) from such collective bargaining entity(ies), on letterhead of such entity(ies), executed by an officer, delegate or official thereof, which verifies/verify the bidder's status as a signatory/participant in good standing to such collective bargaining entity(ies) Apprenticeship Program Agreements.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Bidder: _____

By: _____ Title: _____
(Signature of Partner or Corporate Officer)

Date: _____

Project ID. _____

SAFETY QUESTIONNAIRE

The bidder must include, with its bid, all information requested on this Safety Questionnaire. Failure to provide a completed and signed Safety Questionnaire at the time of bid opening may result in disqualification of the bid as non-responsive.

1. Bidder Information:

Company Name: _____

DDC Project Number: _____

Company Size: _____ Ten (10) employees or less

_____ Greater than ten (10) employees

Company has previously worked for DDC _____ YES _____ NO

2. Type(s) of Construction Work

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

3. Experience Modification Rate:

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

Project ID. _____

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

YEAR	INTRASTATE RATE	INTERSTATE RATE
_____	_____	_____
_____	_____	_____
_____	_____	_____

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

4. OSHA Information:

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

____ YES ____ NO Contractor has had an incident requiring OSHA notification within 8 hours (all work-related fatalities) or an incident requiring OSHA notification within 24 hours (all work-related in-patient hospitalizations, all amputations and all losses of an eye).

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

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

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

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

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

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

Project ID. _____

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

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

5. Safety Performance on Previous DDC Project(s)

___ YES ___ NO Contractor previously audited by the DDC Office of Site Safety.

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

___ YES ___ NO Accident on previous DDC Project(s).

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

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

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

Date: _____ By: _____

(Signature of Owner, Partner, Corporate Officer)

Title: _____

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, such information must be submitted by the bidder 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 must be submitted. The types of information the bidder may be required to submit are described below. 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 27 through 29 of this Bid Booklet. The Project Reference Form consists of 3 parts: (1) Contracts Completed by the Bidder, (2) Contracts Currently Under Construction by the Bidder, and (3) Pending Contracts Not Yet Started by the Bidder.

(B) **Copy of License**: If required, the bidder must submit a copy of the license under which the bidder will be performing the work. Such license must clearly show the following: (1) Name of the Licensee, (2) License Number, and (3) Expiration date of the License. A copy of the license will be required from bidders for the following contracts: Plumbing Work, Electrical Work and Asbestos Abatement.

(C) **Financial Information**: If required, the bidder must submit the financial information described below:

(1) Audited Financial Statements: Financial statements (Balance Sheet and Income Statement) of the entity submitting the bid, as audited by an independent auditor licensed to practice as a certified public accountant (CPA). Audited financial statements for the three most recent fiscal years must be submitted. Each such financial statement must include the auditor's standard report.

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

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

(2) Schedule of Aged Accounts Receivable, including portion due within ninety (90) days.

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.

(NO TEXT THIS PAGE)

A. PROJECT REFERENCES – CONTRACTS COMPLETED BY THE BIDDER

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

Project & Location	Contract Type	Contract Amount ($000)	Date Completed	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. if different from owner

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

(NO TEXT ON THIS PAGE)

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.

(NO TEXT ON THIS PAGE)

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: _____

(NO TEXT ON THIS PAGE)

Certificate of No Change Form

Mayor's Office of Contract Services

- 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.

Mayor's Office of Contract Services

	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

Mayor's Office of Contract Services

- 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.

Mayor's Office of Contract Services

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

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

Certification *This section is required.*

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

Certified By:

_____
Name (Print)

_____
Title

_____
Name of Submitting Entity

_____ _____
Signature *Date*

Notarized By:

_____ _____ _____
Notary Public *County License Issued* *License Number*

Sworn to before me on: _____
Date

IRAN DIVESTMENT ACT COMPLIANCE RIDER

FOR NEW YORK CITY CONTRACTORS

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

(a) The person provides goods or services of twenty million dollars or more in the energy sector of Iran, including a person that provides oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran; or

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

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

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

(1) The investment activities in Iran were made before the effective date of this section (i.e., April 12, 2012), the investment activities in Iran have not been expanded or renewed after the effective date of this section and the person has adopted, publicized and is implementing a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran: or

(2) The City makes a determination that the goods or services are necessary for the City to perform its functions and that, absent such an exemption, the City would be unable to obtain the goods or services for which the contract is offered. Such determination shall be made in writing and shall be a public document.

BIDDER'S CERTIFICATION OF COMPLIANCE WITH IRAN DIVESTMENT ACT

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

[*Please Check One*]

BIDDER'S CERTIFICATION

☐ By submission of this bid or proposal, each bidder/proposer and each person signing on behalf of any bidder/proposer certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief, that each bidder/proposer is not on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law.

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

_____
SIGNATURE

_____
PRINTED NAME

_____
TITLE

Sworn to before me this
_____ day of_____, 20____

_____
Notary Public

Dated:

THE CITY OF NEW YORK
DEPARTMENT OF SMALL BUSINESS SERVICES
DIVISION OF LABOR SERVICES
CONTRACT COMPLIANCE UNIT
110 WILLIAMS STREET
NEW YORK, NEW YORK 10038
PHONE: (212) 513-6323
FAX: (212) 618-8879

CONSTRUCTION

EMPLOYMENT

REPORT

(NO TEXT ON THIS PAGE)

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 INSTRUCTIONS

WHO MUST FILE A CONSTRUCTION EMPLOYMENT REPORT

A Construction Employment Report (ER) must be filed if you meet the following conditions:

CONTRACT FUNDING SOURCE	CONTRACTOR	CONTRACT VALUE	SUBMISSION REQUIREMENT
Federal/Federally assisted	Prime and subcontractors	$10,000 or greater	Construction Employment Report
City and state funded	Prime contractor	$1,000,000 or greater	
	Subcontractor	$750,000 or greater	
		Less than $750,000	Less than $750,000 Certificate (City/State Only)

Prime Contractor:

- A general contractor or construction manager selected to perform work on a construction project funded (in whole or in part) by the federal government with a proposed contract value of $10,000 or more.
- A general contractor or construction manager selected to perform work on a construction project funded or assisted by the City of New York with a proposed contract value of $1,000,000 or more.

Subcontractor:

- A subcontractor selected to perform work on a construction project funded (in whole or in part) by the federal government with a proposed contract value of $10,000 or more.
- A subcontractor selected to perform work on a construction project funded or assisted by the City of New York with a proposed contract value of $750,000 or more.
- A subcontractor selected to perform work on a construction project funded or assisted by the City of New York with a proposed contract value of less than $750,000 must submit a "Less than $750,000" certificate.

WHERE TO FILE

Employment Reports must be filed with the City agency awarding the contract. If you are a contractor or subcontractor who will be working for a private developer in receipt of funding or assistance from the City, the ER must be filed with the City agency with jurisdiction over the developer's project.

DLS REVIEW PROCESS

In accordance with Executive Order 50 (EO 50), upon receipt by DLS of a completed ER, DLS conducts a review of the contractor's current employment policies, practices and procedures, as well as perform a statistical analysis of the contractor's workforce, if necessary. The process is as follows:

1. Within five (5) business days, DLS will review the ER for completeness and accuracy. If any information is omitted or incorrect, or if necessary documents are not submitted, the submission shall be deemed incomplete and DLS will inform the contractor. The substantive compliance review does not commence until the submission is complete. **An incomplete submission will delay the review process and may preclude or interrupt the contract approval.**

2. If the ER submission is complete, the compliance review will proceed, resulting in one of the following:

   Certificate of Approval
   The contractor is found to be in compliance with all applicable laws and regulations. The approval is valid for 36 months.

   Continued Approval Certificate
   The contractor has been issued a Certificate of Approval in the previous 36 months which is good for the applicable contract.

   Conditional Certificate of Compliance
   The contractor is required to take corrective actions in order to be in compliance with EO 50. The contractor must meet the conditions within one month of the issue of the Conditional Certificate.

   Determination of Nonperformance
   The contractor has failed to take the required corrective actions stipulated in the Conditional Certificate. A determination of nonperformance may prevent a contractor from receiving an award of a contract.

HOW TO COMPLETE THE EMPLOYMENT REPORT

Contents

General Information
Part I: Contractor/Subcontractor Information
Part II: Employment Policies and Practices
Part III: Contract Bid Information and Projected and Current Workforce Forms
Signature Page

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

Questions 7 – 11: Please provide the required contact information for your company. All contracts must have a designated Equal Employment Officer.

Question 12: If you are a subcontractor, you must state the name of the contractor for whom you are providing the construction services.

Question 13: Please provide the number of permanent employees in your company.

Question 14a-g: The Project Identification Number (PIN) and the Contract Registration ID Number (CT#) can be obtained from the City agency. Provide a description of the trade work you will perform on this project and the address where the work will be performed. Subcontractors can obtain this information from the contract they have with the prime contractor.

Questions 15 – 18: If your company has received a valid Certificate of Approval within the past 36 months, been audited by the United States Department of Labor, Office of Federal Contract Compliance Programs (OFCCP), or if your company has submitted an ER for a different contract for which you have not yet received a compliance certificate, then you only need to complete and submit the following:

- General Information section
- Part I - Contractor/Subcontractor Information
- Form B - Projected Workforce
- Signature Page

If your company is currently waiting for an approval on another contract previously submitted, be certain to identify the date on which you submitted the completed Employment Report, the name of the City contracting agency with which the contract was made, and the name and telephone number of the person to whom the Employment Report was submitted.

If your company was issued a Conditional Certificate of Approval, all required corrective actions must have been taken or DLS will not issue a Continued Certificate.

Question 18: If the company was audited by the OFCCP, also provide the following:

- Identify the reviewing OFCCP office by its name and address
- If an unconditional certificate of compliance was issued by the OFCCP, attach a copy of the certificate in lieu of completing Parts II and III;
- Include copies of all corrective actions and documentation of OFCCP's performance; and
- Provide a copy of all stated OFCCP findings.

Question 19: Please provide a copy of any Collective Bargaining Agreement(s) which is negotiated through an employer trade association on behalf of your organization or any of its affiliates.

PART II: EMPLOYMENT POLICIES AND PRACTICES

Remember to label all documents with the question number for which they are submitted.

Questions 20a – j: You must respond to the questions as to whether or not your firm has documents reflecting written policies, benefits and procedures. If so, then you must identify by name each document in which the policy(ies), procedure(s) and benefit(s) is located and submit copies of all of the document(s). If your firm follows unwritten practices or procedures, include an explanation of how they operate. Please submit the most current document(s), including all applicable amendments. Label each document and/or unwritten practice according to the question to which it corresponds (e.g. 20a, 20b, etc.)

Questions 21a – h: Inquires about the manner/methods by which you comply with the requirements of the Immigration Reform and Control Act of 1986 (IRCA).

Question 22: Inquires into where and how I-9 forms are maintained and stored.

Questions 23a – e: Inquires into whether or not there is a requirement that an applicant or employee be subjected to a medical examination at any given time. Copes of the medical information questionnaire and instructions must be submitted with the Employment Report.

Question 24: Indicate the existence and location of all statements of your firm's Equal Employment Opportunity policy and attach a copy of each statement.

Question 25: Submit any current Affirmative Action Plan(s) created pursuant to Executive Order 11246.

Question 26: If your firm or collective bargaining agreement has an internal grievance procedure, indicate this and submit a copy of the policy and procedure. If unwritten, explain its nature and operation. Explain how your firm's procedure addresses EEO complaints.

Question 27: If your employees have used the procedure in the last three (3) years, please submit an explanation in the format indicated below:

1. Number of complaint(s)	2. Nature of the complaint(s)	3. Position(s) of the complainant(s)	4. Was an investigation conducted? Y/N	5. Current status of the disposition

Question 28: Indicate whether in the past three (3) years complaints have been filed with a court of law or administrative agency, naming your company as a defendant (or respondent) in a complaint alleging violation of any anti-discrimination or affirmative action laws. If yes, develop and submit a log to show, for each administrative/and or judicial action filed, the following information:

1. Name(s) of complainant(s)	2. Administrative agency or court in which action was filed	3. Nature of the complaint(s)	4. Current status	5. If not pending, the complaint's disposition

Question 29: Identify each job for which a physical qualification exists. Identify and explain the physical qualification(s) for each stated job. Submit job descriptions for each job and the reasons for the qualifications.

Question 30: Identify each job for which there exists any qualification related to age, race, color, national origin, sex, creed, disability, marital status, sexual orientation or citizenship status. Identify and explain the specific related qualification for each job stated. Submit job descriptions for each job and the reasons for the qualifications.

PART III: CONTRACT BID INFORMATION AND PROJECTED AND CURRENT WORKFORCE FORMS

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

Your projections for the utilization of subcontractors on the proposed contract are to be provided in this section. A chart has been provided for the identification of subcontractors. Information is to be provided to the extent known at the time the ER is filed for review by DLS. If the subcontractor's name is unknown, then write "unknown". Under "ownership", enter the appropriate race/ethnic and gender code. If the contract is federally funded or assisted and the subcontractor is being utilized in accordance with applicable federal requirements with respect to Minority Business Enterprise or Woman Business Enterprise requirements, enter the appropriate code. This will also apply to state funded contracts with similar requirements for minority and female owned businesses.

FORM B: PROJECTED WORKFORCE FOR WORK TO BE PERFORMED ON THIS PROJECT

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

FORM C: CURRENT WORKFORCE FOR WORK TO BE PERFORMED ON THIS PROJECT

For each trade *currently* engaged by your company for all work performed in NYC, enter the current workforce for Males and Females by trade classification in the charts provided.

SIGNATURE PAGE

The signatory of this Employment Report and all other documents submitted to DLS must be an official authorized to enter into a binding legal agreement. The signature page must be completed in its entirety and notarized. Only original signatures will be accepted.

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

CONSTRUCTION EMPLOYMENT REPORT

GENERAL INFORMATION

1. Your contractual relationship in this contract is: Prime contractor__x__ Subcontractor____

1a. Are M/WBE goals attached to this project? Yes ____ 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
___Women Owned Business Enterprise
___Disadvantaged Business Enterprise
___Locally Based Business Enterprise
___Emerging Business Enterprise

2a. If you are certified as an **MBE, WBE, LBE, EBE** or **DBE**, what city/state agency are you certified with? _____ Are you DBE certified? Yes ____ No ____

3. Please indicate if you would like assistance from SBS in identifying certified M/WBEs for contracting opportunities: Yes___ No___

4. Is this project subject to a project labor agreement? Yes ____ No ____

5. Are you a Union contractor? Yes ____ No ____ If yes, please list which local(s) you affiliated with _____

6. Are you a Veteran owned company? Yes ____ No ____

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

7. _____
Employer Identification Number or Federal Tax I.D. Email Address

8. _____
Company Name

9. _____
Company Address and Zip Code

10. _____
Chief Operating Officer Telephone Number

11. _____
Designated Equal Opportunity Compliance Officer Telephone Number
(If same as Item #10, write "same")

12. _____
Name of Prime Contractor and Contact Person
(If same as Item #8, write "same")

13. Number of employees in your company: _____

14. Contract information:

(a) _____ Contracting Agency (City Agency)

(b) _____ Contract Amount

(c) _____ Procurement Identification Number (PIN)

(d) _____ Contract Registration Number (CT#)

(e) _____ Projected Commencement Date

(f) _____ Projected Completion Date

(g) Description and location of proposed contract:

_____

_____

15. Has your firm been reviewed by the Division of Labor Services (DLS) within the past 36 months and issued a Certificate of Approval? Yes___ No___

If yes, attach a copy of certificate.

16. Has DLS within the past month reviewed an Employment Report submission for your company and issued a Conditional Certificate of Approval? Yes___ No___

If yes, attach a copy of certificate.

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

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

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

18. Has your company in the past 36 months been audited by the United States Department of Labor, Office of Federal Contract Compliance Programs (OFCCP)? Yes___ No___

If yes,

(a) Name and address of OFCCP office.

_____

_____

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

If yes, attach a copy of such certificate.

(c) Were any corrective actions required or agreed to? Yes___ No___

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

(d) Were any deficiencies found? Yes___ No___

If yes, attach a copy of such findings.

19. Is your company or its affiliates a member or members of an employers' trade association which is responsible for negotiating collective bargaining agreements (CBA) which affect construction site hiring? Yes___ No___

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

PART II: DOCUMENTS REQUIRED

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

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

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

___ (c) Employee Policy/Handbook

___ (d) Personnel Policy/Manual

___ (e) Supervisor's Policy/Manual

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

___ (g) Collective bargaining agreement(s).

___ (h) Employment Application(s)

___ (i) Employee evaluation policy/form(s).

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

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

(a) Prior to job offer	Yes___ No___
(b) After a conditional job offer	Yes___ No___
(c) After a job offer	Yes___ No___
(d) Within the first three days on the job	Yes___ No___
(e) To some applicants	Yes___ No___
(f) To all applicants	Yes___ No___
(g) To some employees	Yes___ No___
(h) To all employees	Yes___ No___

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

_____

_____

23. Does your firm or any of its collective bargaining agreements require job applicants to take a medical examination? Yes___ No___

If yes, is the medical examination given:

(a) Prior to a job offer	Yes___ No___
(b) After a conditional job offer	Yes___ No___
(c) After a job offer	Yes___ No___
(d) To all applicants	Yes___ No___
(e) Only to some applicants	Yes___ No___

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

_____

_____

24. Do you have a written equal employment opportunity (EEO) policy? Yes___ No___

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

_____

_____

25. Does the company have a current affirmative action plan(s) (AAP)
_____Minorities and Women
_____Individuals with handicaps
_____Other. Please specify _____

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

If yes, please attach a copy of this policy.

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

27. Has any employee, within the past three years, filed a complaint pursuant to an internal grievance procedure or with any official of your firm with respect to equal employment opportunity? Yes___ No___

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

28. Has your firm, within the past three years, been named as a defendant (or respondent) in any administrative or judicial action where the complainant (plaintiff) alleged violation of any anti-discrimination or affirmative action laws? Yes___ No___

If yes, attach a log. See instructions.

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

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

_____

_____

30. Are there any jobs for which there are age, race, color, national origin, sex, creed, disability, marital status, sexual orientation, or citizenship qualifications? Yes___ No___

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

_____

_____

SIGNATURE PAGE

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

_____

Contractor's Name

_____

Name of person who prepared this Employment Report Title

_____

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

_____

Telephone Number

_____

Signature of authorized official Date

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

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

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

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

Only original signatures accepted.

Sworn to before me this _____ day of _____ 20 _____

_____

Notary Public Authorized Signature Date

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

1. Do you plan to subcontractor work on this contract? Yes___ No___

2. If yes, complete the chart below.

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

SUBCONTRACTOR'S NAME*	OWNERSHIP (ENTER APPROPRIATE CODE LETTERS BELOW)	WORK TO BE PERFORMED BY SUBCONTRACTOR	TRADE PROJECTED FOR USE BY SUBCONTRACTOR	PROJECTED DOLLAR VALUE OF SUBCONTRACT

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

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

FORM B: PROJECTED WORKFORCE

TRADE CLASSIFICATION CODES

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

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

Trade: _____

Union Affiliation, if applicable _____

Total (Col. #1-10): _____

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

Total Female (Col. #6 – 10): _____

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

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

_____

_____

FOR OFFI[illegible] USE ONLY: File No._____

FORM B: PROJECTED WORKFORCE

Trade: _____

Union Affiliation, if applicable _____

Total (Col. #1-10): _____

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

Total Female (Col. #6 – 10): _____

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

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

_____

_____

FORM C: CURRENT WORKFORCE

TRADE CLASSIFICATION CODES

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

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

Trade: _____

Union Affiliation, if applicable _____

Total (Col. #1-10): _____

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

Total Female (Col. #6 – 10): _____

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

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

_____

_____

FOR OFFIC USE ONLY: File No._____

FORM C: CURRENT WORKFORCE

Trade: _____

Union Affiliation, if applicable _____

Total (Col. #1-10): _____

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

Total Female (Col. #6 – 10): _____

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

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

_____

_____

(NO TEXT ON THIS PAGE)

FOR OFFI USE ONLY: File No._____

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__x__

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
___Women Owned Business Enterprise
___Disadvantaged Business Enterprise
___Locally Based Business Enterprise
___Emerging Business Enterprise

2a. If you are certified as an **MBE**, **WBE**, **LBE, EBE** or **DBE**, what city/state agency are you certified with? _____ Are you DBE certified? Yes ____ No ____

3. Please indicate if you would like assistance from SBS in identifying certified M/WBEs for contracting opportunities: Yes___ No___

4. Is this project subject to a project labor agreement? Yes ____ No ____

5. Are you a Union contractor? Yes ____ No ____ If yes, please list which local(s) you affiliated with _____

6. Are you a Veteran owned company? Yes ____ No ____

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

7. _____
Employer Identification Number or Federal Tax I.D. Email Address

8. _____
Company Name

9. _____
Company Address and Zip Code

10. _____
Chief Operating Officer Telephone Number

11. _____
Designated Equal Opportunity Compliance Officer Telephone Number
(If same as Item #10, write "same")

12. _____
Name of Prime Contractor and Contact Person
(If same as Item #8, write "same")

13. Number of employees in your company: _____

14. Contract information:

(a) _____ Contracting Agency (City Agency)

(b) _____ Contract Amount

(c) _____ Procurement Identification Number (PIN)

(d) _____ Contract Registration Number (CT#)

(e) _____ Projected Commencement Date

(f) _____ Projected Completion Date

(g) Description and location of proposed contract:

_____

_____

15. Has your firm been reviewed by the Division of Labor Services (DLS) within the past 36 months and issued a Certificate of Approval? Yes___ No___

If yes, attach a copy of certificate.

16. Has DLS within the past month reviewed an Employment Report submission for your company and issued a Conditional Certificate of Approval? Yes___ No___

If yes, attach a copy of certificate.

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

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

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

18. Has your company in the past 36 months been audited by the United States Department of Labor, Office of Federal Contract Compliance Programs (OFCCP)? Yes___ No___

If yes,

(a) Name and address of OFCCP office.

_____

_____

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

If yes, attach a copy of such certificate.

(c) Were any corrective actions required or agreed to? Yes___ No___

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

(d) Were any deficiencies found? Yes___ No___

If yes, attach a copy of such findings.

19. Is your company or its affiliates a member or members of an employers' trade association which is responsible for negotiating collective bargaining agreements (CBA) which affect construction site hiring? Yes___ No___

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

PART II: DOCUMENTS REQUIRED

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

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

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

___ (c) Employee Policy/Handbook

___ (d) Personnel Policy/Manual

___ (e) Supervisor's Policy/Manual

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

___ (g) Collective bargaining agreement(s).

___ (h) Employment Application(s)

___ (i) Employee evaluation policy/form(s).

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

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

(a) Prior to job offer	Yes___ No___
(b) After a conditional job offer	Yes___ No___
(c) After a job offer	Yes___ No___
(d) Within the first three days on the job	Yes___ No___
(e) To some applicants	Yes___ No___
(f) To all applicants	Yes___ No___
(g) To some employees	Yes___ No___
(h) To all employees	Yes___ No___

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

_____

_____

23. Does your firm or any of its collective bargaining agreements require job applicants to take a medical examination? Yes___ No___

If yes, is the medical examination given:

(a) Prior to a job offer	Yes___ No___
(b) After a conditional job offer	Yes___ No___
(c) After a job offer	Yes___ No___
(d) To all applicants	Yes___ No___
(e) Only to some applicants	Yes___ No___

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

_____

_____

24. Do you have a written equal employment opportunity (EEO) policy? Yes___ No___

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

_____

_____

25. Does the company have a current affirmative action plan(s) (AAP)
_____Minorities and Women
_____Individuals with handicaps
_____Other. Please specify _____

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

If yes, please attach a copy of this policy.

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

27. Has any employee, within the past three years, filed a complaint pursuant to an internal grievance procedure or with any official of your firm with respect to equal employment opportunity? Yes___ No___

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

28. Has your firm, within the past three years, been named as a defendant (or respondent) in any administrative or judicial action where the complainant (plaintiff) alleged violation of any anti-discrimination or affirmative action laws? Yes___ No___

If yes, attach a log. See instructions.

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

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

_____

_____

30. Are there any jobs for which there are age, race, color, national origin, sex, creed, disability, marital status, sexual orientation, or citizenship qualifications? Yes___ No___

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

_____

_____

SIGNATURE PAGE

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

_____
Contractor's Name

_____
Name of person who prepared this Employment Report Title

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

_____
Telephone Number

_____
Signature of authorized official Date

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

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

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

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

Only original signatures accepted.

Sworn to before me this _____ day of _____ 20 _____

_____
Notary Public Authorized Signature Date

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

1. Do you plan to subcontractor work on this contract? Yes___ No___

2. If yes, complete the chart below.

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

SUBCONTRACTOR'S NAME*	OWNERSHIP (ENTER APPROPRIATE CODE LETTERS BELOW)	WORK TO BE PERFORMED BY SUBCONTRACTOR	TRADE PROJECTED FOR USE BY SUBCONTRACTOR	PROJECTED DOLLAR VALUE OF SUBCONTRACT

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

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

FORM B: PROJECTED WORKFORCE

TRADE CLASSIFICATION CODES

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

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

Trade: _____

Union Affiliation, if applicable _____

Total (Col. #1-10): _____

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

Total Female (Col. #6 – 10): _____

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

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

_____

_____

FOR OFFI USE ONLY: File No._____

FORM B: PROJECTED WORKFORCE

Trade: _____

Union Affiliation, if applicable _____

Total (Col. #1-10): _____

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

Total Female (Col. #6 – 10): _____

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

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

_____

_____

FORM C: CURRENT WORKFORCE

TRADE CLASSIFICATION CODES

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

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

Trade: _____

Union Affiliation, if applicable _____

Total (Col. #1-10): _____

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

Total Female (Col. #6 – 10): _____

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

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

_____

_____

FOR OFFIC USE ONLY: File No._____

FORM C: CURRENT WORKFORCE

Trade:

_____

Union Affiliation, if applicable

_____

Total (Col. #1-10):

_____

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

_____

Total Female
(Col. #6 – 10):

_____

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

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

_____

_____

(NO TEXT ON THIS PAGE)

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

Date _____ **File Number** _____

LESS THAN $750,000 SUBCONTRACT CERTIFICATE (CITY, STATE AND ICIP ONLY)

Are you currently certified as one of the following? Please check yes or no:

MBE Yes ___No ___ WBE Yes ___No ___ LBE Yes ___No ___

DBE Yes___No___ EBE Yes ___ No ___

If you are certified as an MBE, WBE, LBE, EBE or DBE, what city/state agency are you certified with?

_____

Please check one of the following if your firm would like information on how to certify with the City of New York as a:

___Minority Owned Business Enterprise ___Locally based Business Enterprise

___Women Owned Business Enterprise ___Emerging Business Enterprise

___Disadvantaged Business Enterprise

_____
Company Name Employer Identification Number or Federal Tax I.D

_____
Company Address and Zip Code

_____
Contact Person (First Name, Last Name) Telephone Number

_____
Fax Number E-mail Address

Description and location of proposed subcontract: _____

_____

_____

Are you a Union contractor? Yes ____ No ____ If yes, please list which local(s) you affiliated with

_____

Are you a Veteran owned company? Yes ____ No ____

_____ _____
Procurement Identification Number (PIN) Contract Registration Number (CT#)
(City contracts only) (City contracts only)

Revised 8/13
FOR OFFICIAL USE ONLY: File No. _____

Block and Lot Number
(ICIP projects only)

Contract Amount

I, (print name of authorized official signing)_____ hereby certify that I am authorized by the above-named subcontractor to certify that said subcontractor's proposed contract with the above named owner or City agency is less than $750,000. This affirmation is made in accordance with NYC Charter Chapter 56, Executive Order No. 50 (1980) and the implementing Rules.

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/and or criminal prosecution.

Signature of authorized official

Date

Only original signatures accepted.

Sworn to before me this _____ day of _____ 20 _____

Notary Public

Authorized Signature

Date

Revised 8/13

FOR OFFICIAL USE ONLY: File No._____

Department of Design and Construction

INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

VOLUME 1 OF 3

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

Contractor.

Dated_____, **20**_____

Department of Design and Construction

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

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

VOLUME 2 OF 3

INFORMATION FOR BIDDERS
CONTRACT
PERFORMANCE AND PAYMENT BONDS
PREVAILING WAGE SCHEDULE

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION
PREPARED BY DEWBERRY ENGINEERS INC.

DECEMBER 4, 2016

17-074

NOTICE TO BIDDERS

Please be advised that the City of New York has issued a new Standard Construction Contract. The new Contract, which is incorporated in this bid, is significantly different from the 2008 version previously used by the City. A listing of some of the significant changes is provided below. This notice is only a partial listing. Please refer to the Contract itself for a full understanding of the changes and the actual text of the changes that were made. The text of the revised Standard Construction Contract is the controlling document should there be any discrepancies between this notice and the Standard Construction Contract.

Significant changes include the following:

ARTICLE 11 DAMAGES CAUSED BY DELAYS

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

ARTICLE 22 INSURANCE

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

ARTICLE 26 EXTRA WORK

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

ARTICLE 37 LABOR LAW REQUIREMENTS
ARTICLE 38 PAYROLL REPORTS

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

ARTICLE 70 ELECTRONIC FILING

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

Other significant changes include the following:

ARTICLE 7 INDEMNIFICATION

Changes have been made to the indemnification provisions.

ARTICLE14 FINAL ACCEPTANCE OF WORK
ARTICLE 44 SUBSTANTIAL COMPLETION PAYMENT

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

ARTICLE 15 LIQUIDATED DAMAGES

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

ARTICLE 17 SUBCONTRACTS

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

ARTICLE 19 SECURITY DEPOSIT

The provisions governing the return of bid deposits are clarified.

ARTICLE 20 PAYMENT GUARANTEE

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

ARTICLE 28 RECORDKEEPING FOR EXTRA OR DISPUTED WORK

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

ARTICLE 35 EMPLOYEES

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

ARTICLE 38 PAYROLL REPORTS
ARTICLE 77 RECORDS RETENTION

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

ARTICLE 42 PARTIAL PAYMENTS

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

ARTICLE 62 TAX EXEMPTION

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

(NO TEXT ON THIS PAGE)

HIRING AND EMPLOYMENT RIDER:

HIRENYC AND REPORTING REQUIREMENTS

Introduction

This Rider shall apply to all contracts for goods, services, and construction with a value of one million dollars ($1,000,000.00) or more, provided, however, that certain requirements of the Rider shall only apply as indicated below. This Rider addresses the HireNYC process, including reporting obligations under the HireNYC process, and certain other reporting requirements imposed by law. In general, the HireNYC process under this Rider requires the Contractor to enroll with the HireNYC portal for the City of New York ("the City") found within the Department of Small Business Services's ("SBS") website, to disclose all entry to mid-level job opportunities described in this Rider arising from this contract and located in New York City, and to agree to interview qualified candidates from HireNYC for those opportunities.

HireNYC Requirements

A. Enrollment

The Contractor shall enroll with the HireNYC system, found at www.nyc.gov/sbs, within thirty (30) days after the registration of this Contract pursuant to Section 328 of the New York City Charter. The Contractor shall provide information about the business, designate a primary contact and say whether it intends to hire for any entry to mid-level job opportunities arising from this contract and located in New York City, and, if so, the approximate start date of the first hire.

B. Job Posting Requirements

Once enrolled in HireNYC, the Contractor agrees to update the HireNYC portal with all entry to mid-level job opportunities arising from this contract and located in New York City, if any, which shall be defined as jobs requiring no more than an associate degree, as provided by the New York State Department of Labor (see Column F of https://labor.ny.gov/stats/2012-2022-NYS-Employment-Prospects.xls). The information to be updated includes the types of entry and mid-level positions made available from the work arising from the contract and located in New York City, the number of positions, the anticipated schedule of initiating the hiring process for these positions, and the contact information for the Contractor's representative charged with overseeing hiring. The Contractor must update the HireNYC portal with any hiring needs arising from the contract and located in New York City, and the requirements of the jobs to be filled, no less than three weeks prior to the intended first day of employment for each new position, except with the permission of SBS, not to be unreasonably withheld, and must also update the HireNYC portal as set forth below.

After enrollment through HireNYC and submission of relevant information, SBS will work with the Contractor to develop a recruitment plan which will outline the candidate screening process,

and will provide clear instructions as to when, where, and how interviews will take place. HireNYC will screen applicants based on employer requirements and refer applicants whom it believes are qualified to the Contractor for interviews. The Contractor must interview referred applicants whom it believes are qualified.

After completing an interview of a candidate referred by HireNYC, the Contractor must provide feedback via the portal within twenty (20) business days to indicate which candidates were interviewed and hired, if any. In addition, the Contractor shall provide the start date of new hires, and additional information reasonably related to such hires, within twenty (20) business days after the start date. In the event the Contractor does not have any job openings covered by this Rider in any given year, the Contractor shall be required to provide an annual update to HireNYC to that effect. For this purpose, the reporting year shall run from the date of the registration of the contract and each anniversary date.

These requirements do not limit the Contractor's ability to assess the qualifications of prospective workers, and to make final hiring and retention decisions. No provision of this Rider shall be interpreted so as to require the Contractor to employ any particular worker.

In addition, the provisions of this Rider shall not apply to positions that the Contractor intends to fill with employees employed pursuant to the job retention provision of Section 22-505 of the Administrative Code of the City of New York. The Contractor shall not be required to report such openings with HireNYC. However, the Contractor shall enroll with the HireNYC system pursuant to Section A, above, and, if such positions subsequently become open, then the remaining provisions of this Rider will apply.

C. Breach and Liquidated Damages

If the Contractor fails to comply with the terms of the contract and this Rider (1) by not enrolling its business with HireNYC; (2) by not informing HireNYC, as required, of open positions; or (3) by failing to interview a qualified candidate, the contracting agency may assess liquidated damages in the amount of two-thousand five hundred dollars ($2,500.00) per breach. For all other events of noncompliance with the terms of this Rider, the agency may assess liquidated damages in the amount of five hundred dollars ($500) per breach.

Furthermore, in the event the Contractor breaches the requirements of this Rider during the term of the contract, the City may hold the Contractor in default of this contract.

Audit Compliance

In addition to the auditing requirements set forth in other parts of the contract, the Contractor shall permit SBS and the City to inspect any and all records concerning or relating to job openings or the hiring of individuals for work arising from the contract and located in New York City. The Contractor shall permit an inspection within seven (7) business days of the request.

Other Reporting Requirements

The Contractor shall report to the City, on a monthly basis, all information reasonably requested by the City that is necessary for the City to comply with any reporting requirements imposed by law or rule, including any requirement that the City maintain a publicly accessible database. In addition, the Contractor agrees to comply with all reporting requirements imposed by law or rule, or as otherwise requested by the City.

Construction Requirements

Construction contractors shall comply with the HireNYC requirements set forth above for all non-trades jobs (e.g., for an administrative position arising out of the work of the contract and located in New York City) as set forth above.

In addition, construction contractors shall reasonably cooperate with SBS and the City on specific outreach events, including Hire on the Spot events, for the hiring of trades workers for the work of this contract.

Further, this contract shall be subject to a project labor agreement if so required elsewhere in this contract.

Federal Hiring Requirements

The Contractor shall comply with all federal hiring requirements as may be set forth elsewhere in this contract, including, as applicable:

- Section 3 of the HUD Act of 1968, which requires, to the greatest extent feasible, economic opportunities for 30 percent of new hires be given to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- Executive Order 11246, which prohibits discrimination in employment due to race, color, religion, sex or national origin, and requires the implementation of goals for minority and female participation for work involving any Construction trade.

(NO TEXT ON THIS PAGE)

PAID SICK LEAVE LAW CONTRACT RIDER

Introduction and General Provisions

The Earned Sick Time Act, also known as the Paid Sick Leave Law ("PSLL"), requires covered employees who annually perform more than 80 hours of work in New York City to be provided with paid sick time.[1] Contractors of the City of New York or of other governmental entities may be required to provide sick time pursuant to the PSLL.

The PSLL became effective on April 1, 2014, and is codified at Title 20, Chapter 8, of the New York City Administrative Code. It is administered by the City's Department of Consumer Affairs ("DCA"); DCA's rules promulgated under the PSLL are codified at Chapter 7 of Title 6 of the Rules of the City of New York ("Rules").

Contractor agrees to comply in all respects with the PSLL and the Rules, and as amended, if applicable, in the performance of this agreement. Contractor further acknowledges that such compliance is a material term of this agreement and that failure to comply with the PSLL in performance of this agreement may result in its termination.

Contractor must notify the Agency Chief Contracting Officer of the City agency or other entity with whom it is contracting in writing within ten (10) days of receipt of a complaint (whether oral or written) regarding the PSLL involving the performance of this agreement. Additionally, Contractor must cooperate with DCA's education efforts and must comply with DCA's subpoenas and other document demands as set forth in the PSLL and Rules.

The PSLL is summarized below for the convenience of Contractor. Contractor is advised to review the PSLL and Rules in their entirety. On the website www.nyc.gov/PaidSickLeave there are links to the PSLL and the associated Rules as well as additional resources for employers, such as Frequently Asked Questions, timekeeping tools and model forms, and an event calendar of upcoming presentations and webinars at which Contractor can get more information about how to comply with the PSLL. Contractor acknowledges that it is responsible for compliance with the PSLL notwithstanding any inconsistent language contained herein.

Pursuant to the PSLL and the Rules:

Applicability, Accrual, and Use

An employee who works within the City of New York for more than eighty hours in any consecutive 12-month period designated by the employer as its "calendar year" pursuant to the PSLL ("Year") must be provided sick time. Employers must provide a minimum of one hour of sick time for every 30 hours worked by an employee and compensation for such sick time must

[1] Pursuant to the PSLL, if fewer than five employees work for the same employer, as determined pursuant to New York City Administrative Code §20-912(g), such employer has the option of providing such employees uncompensated sick time.

be provided at the greater of the employee's regular hourly rate or the minimum wage. Employers are not required to provide more than forty hours of sick time to an employee in any Year.

An employee has the right to determine how much sick time he or she will use, provided that employers may set a reasonable minimum increment for the use of sick time not to exceed four hours per day. In addition, an employee may carry over up to forty hours of unused sick time to the following Year, provided that no employer is required to allow the use of more than forty hours of sick time in a Year or carry over unused paid sick time if the employee is paid for such unused sick time and the employer provides the employee with at least the legally required amount of paid sick time for such employee for the immediately subsequent Year on the first day of such Year.

An employee entitled to sick time pursuant to the PSLL may use sick time for any of the following:

- such employee's mental illness, physical illness, injury, or health condition or the care of such illness, injury, or condition or such employee's need for medical diagnosis or preventive medical care;
- such employee's care of a family member (an employee's child, spouse, domestic partner, parent, sibling, grandchild or grandparent, or the child or parent of an employee's spouse or domestic partner) who has a mental illness, physical illness, injury or health condition or who has a need for medical diagnosis or preventive medical care;
- closure of such employee's place of business by order of a public official due to a public health emergency; or
- such employee's need to care for a child whose school or childcare provider has been closed due to a public health emergency.

An employer must not require an employee, as a condition of taking sick time, to search for a replacement. However, an employer may require an employee to provide: reasonable notice of the need to use sick time; reasonable documentation that the use of sick time was needed for a reason above if for an absence of more than three consecutive work days; and/or written confirmation that an employee used sick time pursuant to the PSLL. However, an employer may not require documentation specifying the nature of a medical condition or otherwise require disclosure of the details of a medical condition as a condition of providing sick time and health information obtained solely due to an employee's use of sick time pursuant to the PSLL must be treated by the employer as confidential.

If an employer chooses to impose any permissible discretionary requirement as a condition of using sick time, it must provide to all employees a written policy containing those requirements, using a delivery method that reasonably ensures that employees receive the policy. If such employer has not provided its written policy, it may not deny sick time to an employee because of non-compliance with such a policy.

Sick time to which an employee is entitled must be paid no later than the payday for the next regular payroll period beginning after the sick time was used.

Exemptions and Exceptions

Notwithstanding the above, the PSLL does not apply to any of the following:

- an independent contractor who does not meet the definition of employee under section 190(2) of the New York State Labor Law;
- an employee covered by a valid collective bargaining agreement in effect on April 1, 2014 until the termination of such agreement;
- an employee in the construction or grocery industry covered by a valid collective bargaining agreement if the provisions of the PSLL are expressly waived in such collective bargaining agreement;
- an employee covered by another valid collective bargaining agreement if such provisions are expressly waived in such agreement and such agreement provides a benefit comparable to that provided by the PSLL for such employee;
- an audiologist, occupational therapist, physical therapist, or speech language pathologist who is licensed by the New York State Department of Education and who calls in for work assignments at will, determines his or her own schedule, has the ability to reject or accept any assignment referred to him or her, and is paid an average hourly wage that is at least four times the federal minimum wage;
- an employee in a work study program under Section 2753 of Chapter 42 of the United States Code;
- an employee whose work is compensated by a qualified scholarship program as that term is defined in the Internal Revenue Code, Section 117 of Chapter 20 of the United States Code; or
- a participant in a Work Experience Program (WEP) under section 336-c of the New York State Social Services Law.

Retaliation Prohibited

An employer may not threaten or engage in retaliation against an employee for exercising or attempting in good faith to exercise any right provided by the PSLL. In addition, an employer may not interfere with any investigation, proceeding, or hearing pursuant to the PSLL.

Notice of Rights

An employer must provide its employees with written notice of their rights pursuant to the PSLL. Such notice must be in English and the primary language spoken by an employee, provided that DCA has made available a translation into such language. Downloadable notices are available on DCA's website at http://www.nyc.gov/html/dca/html/law/PaidSickLeave.shtml.

Any person or entity that willfully violates these notice requirements is subject to a civil penalty in an amount not to exceed fifty dollars for each employee who was not given appropriate notice.

Records

An employer must retain records documenting its compliance with the PSLL for a period of at least three years, and must allow DCA to access such records in furtherance of an investigation related to an alleged violation of the PSLL.

Enforcement and Penalties

Upon receiving a complaint alleging a violation of the PSLL, DCA has the right to investigate such complaint and attempt to resolve it through mediation. Within 30 days of written notification of a complaint by DCA, or sooner in certain circumstances, the employer must provide DCA with a written response and such other information as DCA may request. If DCA believes that a violation of the PSLL has occurred, it has the right to issue a notice of violation to the employer.

DCA has the power to grant an employee or former employee all appropriate relief as set forth in New York City Administrative Code 20-924(d). Such relief may include, among other remedies, treble damages for the wages that should have been paid, damages for unlawful retaliation, and damages and reinstatement for unlawful discharge. In addition, DCA may impose on an employer found to have violated the PSLL civil penalties not to exceed $500 for a first violation, $750 for a second violation within two years of the first violation, and $1,000 for each succeeding violation within two years of the previous violation.

More Generous Polices and Other Legal Requirements

Nothing in the PSLL is intended to discourage, prohibit, diminish, or impair the adoption or retention of a more generous sick time policy, or the obligation of an employer to comply with any contract, collective bargaining agreement, employment benefit plan or other agreement providing more generous sick time. The PSLL provides minimum requirements pertaining to sick time and does not preempt, limit or otherwise affect the applicability of any other law, regulation, rule, requirement, policy or standard that provides for greater accrual or use by employees of sick leave or time, whether paid or unpaid, or that extends other protections to employees. The PSLL may not be construed as creating or imposing any requirement in conflict with any federal or state law, rule or regulation.

NEW YORK CITY STANDARD CONSTRUCTION CONTRACT (DEC. 2013)
INSURANCE RIDER

The following provisions supersede the corresponding provisions in the December 2013 version of the New York City Standard Construction Contract:

1. Section 22.1.1(c) provides as follows:

   22.1.1(c) If the **Work** requires a permit from the Department of Buildings pursuant to 1 RCNY Section 101-08, the **Contractor** shall provide Commercial General Liability Insurance with limits of at least those required by 1 RCNY section 101-08 or greater limits provided by the Agency in Schedule A. If the Work does not require such a permit, the minimum limits shall be those provided for in Schedule A.

2. Section 22.3.3 provides as follows:

   22.3.3 For policies provided pursuant to all of Article 22.1 other than Article 22.1.2, the **Contractor** shall submit one or more Certificates of Insurance on forms acceptable to the **Commissioner**. All such Certificates of Insurance shall certify (a) the issuance and effectiveness of such policies of insurance, each with the specified minimum limits (b) for insurance secured pursuant to Article 22.1.1 that the **City** and any other entity specified in Schedule A is an Additional Insured thereunder; (c) in the event insurance is required pursuant to Article 22.1.6 and/or Article 22.1.7, that the City is an Additional Insured thereunder; and (d) the company code issued to the insurance company by the National Association of Insurance Commissioners (the NAIC number). All such Certificates of Insurance shall be accompanied by the required additional insured endorsements and either a duly executed "Certification by Insurance Broker or Agent" in the form contained in Part III of Schedule A or copies of all policies referenced in such Certificate of Insurance as certified by an authorized representative of the issuing insurance carrier. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

(NO TEXT ON THIS PAGE)

CITY OF NEW YORK

DEPARTMENT OF
DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURES

INFORMATION FOR BIDDERS

JUNE 2015

(NO TEXT ON THIS PAGE)

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

TABLE OF CONTENTS

SECTION 1.	DESCRIPTION AND LOCATION OF WORK	1
SECTION 2.	TIME AND PLACE FOR RECEIPT OF BIDS	1
SECTION 3.	DEFINITIONS	1
SECTION 4.	INVITATION FOR BIDS AND CONTRACT DOCUMENTS	1
SECTION 5.	PRE-BID CONFERENCE	2
SECTION 6.	AGENCY CONTACT	2
SECTION 7.	BIDDER'S OATH	2
SECTION 8.	EXAMINATION AND VIEWING OF SITE, CONSIDERATION OF OTHER SOURCES OF INFORMATION AND CHANGED CONDITIONS	2
SECTION 9.	EXAMINATION OF PROPOSED CONTRACT	3
SECTION 10.	FORM OF BID	3
SECTION 11.	IRREVOCABILITY OF BID	3
SECTION 12.	ACKNOWLEDGMENT OF AMENDMENTS	4
SECTION 13.	BID SAMPLES AND DESCRIPTIVE LITERATURE	4
SECTION 14.	PROPRIETARY INFORMATION/TRADE SECRETS	4
SECTION 15.	PRE-OPENING MODIFICATION OR WITHDRAWAL OF BIDS	4
SECTION 16.	BID EVALUATION AND AWARD	4
SECTION 17.	LATE BIDS, LATE WITHDRAWALS AND LATE MODIFICATIONS	5
SECTION 18.	WITHDRAWAL OF BIDS.	5
SECTION 19.	MISTAKE IN BIDS	5
SECTION 20.	LOW TIE BIDS	6
SECTION 21.	REJECTION OF BIDS	6
SECTION 22.	RIGHT TO APPEAL DETERMINATIONS OF NON-RESPONSIVENESS OR NON-RESPONSIBILITY AND RIGHT TO PROTEST SOLICITATIONS AND AWARD	7
SECTION 23.	AFFIRMATIVE ACTION AND EQUAL EMPLOYMENT OPPORTUNITY	7
SECTION 24.	VENDEX QUESTIONNAIRES	7
SECTION 25.	COMPLAINTS ABOUT THE BID PROCESS	8
SECTION 26.	BID, PERFORMANCE AND PAYMENT SECURITY	8
SECTION 27.	FAILURE TO EXECUTE CONTRACT	9
SECTION 28.	BIDDER RESPONSIBILITIES AND QUALIFICATIONS	9
SECTION 29.	EMPLOYMENT REPORT	10
SECTION 30.	LABOR LAW REQUIREMENTS	10
SECTION 31.	INSURANCE	10
SECTION 32.	LUMP SUM CONTRACTS	11
SECTION 33.	UNIT PRICE CONTRACTS	11
SECTION 34.	EXCISE TAX	11
SECTION 35.	LICENSES AND PERMITS	11
SECTION 36.	MULTIPLE PRIME CONTRACTORS	11
SECTION 37.	LOCALLY BASED ENTERPRISE REQUIREMENTS (LBE)	12
SECTION 38.	BID SUBMISSION REQUIREMENTS	13
SECTION 39.	COMPTROLLER'SCERTIFICATE	14
SECTION 40.	PROCUREMENT POLICY BOARD RULES	14
SECTION 41.	DDC SAFETY REQUIREMENTS	14

(NO TEXT ON THIS PAGE)

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 as page A-1 of 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

(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 have been reasonably 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 Office or the contract 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 (page A-1 of the Bid Booklet). 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 (page A-1 of the Bid Booklet). 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: (I) 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 Schedule, 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 its 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 following forms, all of which are contained in the Bid Booklet, are to be completed and submitted with the bid:

(1) Bid Schedule and Bid Form, including Affirmation
(2) Bid Security (if required, see Attachment 1 on Page A-1)
(3) M/WBE Subcontactor Utilization Plan (if participation goals have been established)

FAILURE TO SUBMIT ITEMS (1), (2) AND (3)
WILL RESULT IN THE DISQUALIFICATION OF THE BID.

(4) Safety Questionnaire
(5) Construction Employment Report (if bid is $1,000,000 or more)
(6) Contract Certificate (if bid is less than $1,000,000)
(7) Confirmation of Vendex Compliance
(8) Special Experience Requirements (if applicable to this contract)
(9) Apprenticeship Program Questionnaire (if applicable)

FAILURE TO SUBMIT ITEMS (4) THROUGH (9)
MAY RESULT IN THE DISQUALIFICATION OF THE BID.

39. Comptroller's Certificate

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

40. Procurement Policy Board Rules

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

41. DDC Safety Requirements

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

CITY OF NEW YORK

DEPARTMENT OF DESIGN AND CONSTRUCTION

SAFETY REQUIREMENTS

June 2015

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

City of New York Department of Design and Construction: Safety Requirements
Safety and Site Support– Quality Assurance and Construction Safety

I. POLICY ON SITE SAFETY

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

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

II. PURPOSE

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

III. DEFINITIONS

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

Competent Person: As defined by OSHA, an individual who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees or the general public, and who has authorization to take prompt corrective measures to eliminate them.

Construction Safety Auditor: A representative of the QA&CS Construction Safety Unit who provides inspection and assessment services to enhance health and safety on all DDC construction projects. The activities of the Construction Safety Auditor include performing site surveys, reviewing health and safety plans, reviewing construction permits, and rendering technical advice and assistance to DDC Resident Engineers and Project Managers.

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

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

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

Daily Safety Job Briefing: Daily jobsite safety meetings, giving to all jobsite personnel by contractor, with the purpose of discussing project specific safety procedures for the scheduled construction work.

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

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

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

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

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

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

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

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

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

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

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

Site Safety Plan: A site-specific safety plan developed by the Contractor for a specific project. The Site Safety Plan must identify hazards associated with the project, and include specific safety procedures and training appropriate and necessary to complete the work. The Site Safety Plan must be submitted prior to the commencement of work at the site and is subject to review and acceptance by the Construction Safety Unit.

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

Weekly Safety Meetings: Weekly documented jobsite safety meetings, given to all jobsite personnel by contractor, with the purpose of discussing general safety topics and job specific requirements encountered at the DDC work site.

Work: The construction required by the Contract Documents whether completed or partially completed, performed by the Contractor/ subcontractors. Work refers to the furnishing of labor, furnishing and incorporating materials and equipment into the construction and providing any service required by the Contract Documents to fulfill the Contractor's obligation to complete the Project.

IV. RESPONSIBILITIES

All persons who manage, perform, and provide support for construction projects shall conduct operations in compliance with the requirements identified in this Policy and all applicable governing regulatory agency requirements and guidelines pertaining to safety in construction.

A. DDC or CM Resident Engineer / Construction Project Manager

- Monitors the issuance of safety- related permits, approvals and drawings and maintains copies on site.
- Monitors construction-related work activities to confirm that they are conducted in accordance with DDC policies and all applicable regulations that pertain to construction safety.
- Maintains documentation and periodically attends weekly safety meetings and daily safety job briefings.
- Notifies the Construction Safety Unit and the ACCO's Insurance and Risk Management Unit of project- related accidents and emergencies, as per DDC's Construction Safety Emergency and Accident Notification and Response Protocol.
- Gathers facts related to all accidents and prepares DDC Construction Accident Report.

- Notifies the Construction Safety Unit within two (2) hours of the start of an inspection by any outside regulatory agency personnel, including OSHA, NYC DOB or others and forwards a copy of the inspection report within three days of its receipt.
- Monitors the conditions at the site for conformance with the contractor's Site Safety Plan and DDC construction documents.
- Notifies the contractor and DDC in the event that any condition or activity exists that is not in compliance with the contractor's Site Safety Plan, applicable federal, state or local codes or any condition that presents a potential risk of injury to the public or workers or possible damage to property.
- Notifies DDC of any unsafe or unhealthy condition and directs the contractor to provide such labor, materials, equipment and supervision to abate such conditions.
- Escort and assist QA&CS Construction Safety Auditors during the field and record inspections.
- Reports emergency conditions to the Construction Safety Unit immediately.

B. Contractors

- Submit a completed Safety Questionnaire and other safety performance related documentation with its bid or as part of a pre-qualification package.
- Complete a written Job Hazard Analysis (JHA) that identifies safety hazards for project specific work tasks and hazard control methods. A written JHA shall be available at the site for reference and included in the Site Safety Plan submitted by the contractor.
- Submit a Site Safety Plan and Safety Program within 30 days from the Award Date or as otherwise directed. The Site Safety Plan and Safety Program are subject to review and acceptance by the Construction Safety Unit prior to the commencement of work at the site. The Site Safety Plan shall be revised and updated as necessary.
- Develop project specific safety procedures to protect general public during all construction activities for the duration of the project.
- Ensure that all employees are aware of the hazards associated with the project through documented formal and informal training and/or other communications. Conduct and document weekly safety meetings and daily job briefing sessions for the duration of the project. Documentation to be provided to the RE/CPM on a monthly basis.
- Name the Project Safety Representative and Project Safety Manager, if required. The Contractor will be required to identify the Project Safety Representative and Project Safety Manager in the Site Safety Plan. Resumes, outlining the qualification and experience for the Project Safety Representative and Project Safety Manager, shall be available upon request. DDC reserves the right to request that the Contractor replace any Project Safety Representative or Project Safety Manager for any reason at any time during the project.
- Name a Competent Person(s), The Contractor will be required to identify a Competent Person(s) in the Site Safety Plan.
- Comply with all mandated federal, state and local safety and health rules and regulations.
- Comply with all provisions of the Site Safety Plan.
- Conduct applicable safety training prior to the commencement of work at the site. All training records (OSHA 10-hour, flagger, scaffold, fall protection, confined space entry, etc.) shall be provided to the RE/CPM prior to mobilization, included in the Site Safety Plan, kept current during the course of the project, and available for review. Prior to performing any work on DDC project all employees shall have successfully completed, within the previous five calendar years, a 10 Hour OSHA construction safety course.
- As part of the Site Safety Plan, prepare a site specific programs and plans, such as MPT plan, steel erection plan, confined space program, fall protection plan, demolition plan, etc. (if not otherwise provided in the contract documents) and comply with all of its provisions.
- Conduct and document site-specific safety orientation for Contractor personnel to review the hazards associated with the project as identified in the Site Safety Plan and the specific safety procedures and

controls that will be used to protect workers, the general public and property. The Project Safety Representative and/or Project Safety Manager will conduct this training prior to mobilization and provide documentation to the RE/CPM.

- Provide, replace and adequately maintain at or around the project site, suitable and sufficient signage, lights, barricades and enclosures (fences, sidewalk sheds, netting, bracing, etc.).
- Report unsafe or unhealthy conditions to the RE/CPM as soon as practical, but no more than 24 hours after discovery, and take prompt actions to remove or abate such conditions.
- Report any accidents involving injuries to workers or the general public, as well as property damage, to the RE/CPM within one (1) hour.
- Following an accident, the Contractor shall not remove or alter any equipment, structure, material, or evidence related to the accident. Exception: Immediate emergency procedures taken to secure structures, temporary construction, operations, or equipment that pose a continued imminent danger or facilitate assistance for persons who are trapped or who have sustained bodily injury.
- Notify the RE/CPM within one (1) hour of the start of an inspection by any outside regulatory agency personnel, including OSHA, NYC DOB or others.
- Maintain all records pertaining to all required compliance documents and accident and injury reports.
- Address DDC recommendations on safety, which shall in no way relieve the Contractor of its responsibilities for safety on the project. The Contractor has sole responsibility for safety.

V. SAFETY QUESTIONNAIRE

DDC requires that all Contractors provide information regarding their current and past safety performance and programs. This will be accomplished by the use of the DDC Safety Questionnaire. As a part of the bid submittal package, the contractor must submit a completed DDC Safety Questionnaire listing company workers' compensation experience modification rating and OSHA Incident Rates for the three (3) years prior to the date of the bid opening. DDC may request a Contractor to update its Questionnaire at any time or to provide more detailed information. The Contractor must provide the requested information within 15 days.

The following criteria will be used by DDC in reviewing the Contractor's responsibility, which will be based on the information provided on the questionnaire:

Criteria 1: OSHA Injury and Illness Rates (I&IR) are no greater than the average for the industry (based on the most current Bureau of Labor Statistics data for the Contractors SIC code); and

Criteria 2: Insurance workers compensation Experience Modification Rate (EMR) equal to or less than 1.0; and

Criteria 3: Any willful violations issued by OSHA or NYC DOB within the last three (3) years; and

Criteria 4: A fatality (worker or member of public) and injuries, requiring OSHA notification, experienced on or near Contractor's worksite within the last three (3) years; and

Criteria 5: Past safety performance on DDC projects (accidents; status of safety program and site safety plan submittals; etc.)

Criteria 6: OSHA violation history for the last three (3) years;

Criteria 7: Contractor shall provide OSHA Injury and Illness Records (currently OSHA 300 and 300A Logs) for the last three (3) years.

If the Contractor fails to meet the basic criteria listed above, the Construction Safety Unit may request, through the ACCO, more details concerning the Contractor's safety experience. DDC may request the Contractor to provide copies of, among other things, accident investigation reports, OSHA records, OSHA and NYC DOB citations, EPA citations and written corrective action plan.

VI. SAFETY PROGRAM AND SITE SAFETY PLAN

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

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

- Responsibility and Organization – Contractor's company organization chart, including titles, names, contact information, roles and responsibilities for key personnel, etc.
- Safety Training Program – Contractor's corporate training program.
- Hazard Corrective Actions – Criteria for safety inspections, identification of safety non-compliances, implementation and verification of corrective actions, forms to document safety inspections results, etc.
- Accident/Exposure Investigation
- Recordkeeping and Reporting Injuries – Responsible staff; reporting and recording criteria; OSHA 300 and 300A form completion, etc.
- Fire Protection and Prevention Program
- Housekeeping
- Illumination
- Sanitation
- Personal Protective Equipment (PPE) – Company policy for the use of head protection, foot protection, hearing protection, eye and face protection, protective clothing, and any additional protective equipment based on work tasks; PPE inspection and replacement policy.
- Hazard Communication Program
- Employee Emergency Action Plan
- Protection of Underground Facilities and Utilities
- Ionizing/Nonionizing Radiation
- Material Handling, Storage, Use and Disposal
- Tools – Hand and Power
- Signs, Signals, and Barricades
- Scaffold – Local Law 52 requirements, installation, use, inspection, dismantling, training and general safety requirements.
- Welding and Cutting
- Electrical Safety
- Fall Protection
- Cranes, Derrick, Hoists, Elevators, Conveyors
- Excavation Safety
- Concrete and Masonry Construction
- Maintenance and Protection of Traffic
- Steel Erection
- Demolition
- Blasting and the Use of Explosives
- Stairways and Ladders

- Toxic and Hazardous Substances
- Alcohol and Drug Abuse Policy
- Rodents and Vermin
- Occupational Noise Exposure
- Confined Space Program – General confined Space Program: training requirements, confined space hazard evaluation procedure, atmospheric testing procedure, confined space classification, permit-required procedure, communication procedure, rescue procedure, forms, etc.
- Construction Vehicles/Heavy Equipment
- Dust Control Procedures

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

- Project Work Scope – Detailed information regarding work tasks that will be performed by contractor and subcontractors under the project.
- Responsibility and Organization – Contractor's organization chart with responsible staff for the project, including titles, names, contact information, roles and responsibilities.
- Safety Training and Education – OSHA 10 Hours training, requirements for daily safety briefings and weekly safety meetings, any work task specific training, responsible staff for implementation of training program for the project.
- Job Hazard Analysis (JHA) – Project specific Job Hazard Analysis including work tasks, identified hazards, hazard control methods (administrative, engineering, PPE), contractor's name, project id, location, name and signature of a certifying person, hazard assessment date.
- Protection of Public
- Hazard Corrective Actions – Responsible staff, forms, frequency of safety inspections and implementation of corrective actions.
- Accident/Exposure Investigation – Accident/incident notification procedure of DDC project staff. Project specific procedures for accident investigation and implementation of corrective actions.
- First Aid and Medical Attention – Responsible staff, location and inspection of First Aid kit, directions to local hospitals; emergency telephone numbers.
- Project Specific Fire Protection and Prevention Program.
- Project Specific Illumination Procedure.
- Project Specific Sanitation Procedure.
- Personal Protective Equipment (PPE)
- Hazard Communication Program – Responsible staff; training; SDS records, project specific list of chemical; location of the program and SDS records.
- Means of Egress – Information regarding free and unobstructed egress from all parts of the building or structure; exit marking; maintenance of means of egress, etc.
- Employee Emergency Action Plan – Project specific: responsible staff, emergency alarm system, evacuation procedure, procedure to account for employees after evacuation, etc.
- Evacuation Plan – Project specific evacuation plan (drawing/scheme) with exists and evacuation routes.
- Protection of Underground Facilities and Utilities, including responsible staff.
- Ionizing/Nonionizing Radiation – Competent person, license and qualification requirements, type of radiation, employees exposure and protection, etc.
- Material Handling, Storage, Use and Disposal – Project specific information regarding material storage and disposal.
- Signs, Signals, and Barricades – Use of danger/warning signs, sidewalk closure, safety instruction signs, pedestrian fencing and barricades, etc.
- Scaffold – Project specific scaffold types, training, scaffold drawings, competent person, criteria for project specific scaffold, falling object protection.

- Welding and Cutting – project specific procedure for welding and cutting, including all necessary safety requirements such as fire prevention, personal protective equipment, hot work permits, FDNY certificate requirements.
- Fall Protection – Project specific information regarding selected fall protection systems, fall protection plan.
- Cranes, Derrick, Hoists, Elevators, Conveyors – project specific equipment information including type, rated load capacity, manufacture specification requirements, competent person, exposure to falling load, inspection, recordkeeping, clearance requirements, communication procedure, ground lines, permits.
- Excavation Safety – Competent person, project specific protective system.
- Maintenance and Protection of Traffic Plan – Project specific MPT plan, flagmen training.
- Steel Erection – Site specific erection plan, requirements for applicable written notifications, competent person.
- Demolition – Engineering survey, including written evidence, disconnection of all effected utilities, identification of all hazardous chemicals, materials, gases, etc., floor openings, chutes, inspection and maintenance of all stairs/passageways, removal of materials/debris/structural elements, lock out/tag out, competent person.
- Blasting and the Use of Explosives – Project specific safety procedures, warning signs, training/qualification, transportation, storage and use of explosives, inspection.
- Toxic and Hazardous Substances – Safety procedures for substances to be used on project.
- Noise Mitigation Plan – Completed project specific Noise Mitigation Plan.
- Confined Space Program – Project specific Confined Space Program, responsible staff, training records, equipment information, rescue procedure, list of project specific confined spaces, forms.
- Construction Vehicles/Heavy Equipment – Type of construction vehicles/heavy equipment to be used on site.
- Dust Mitigation Plan – Completed project specific Dust Mitigation Plan.

The most critical component of the Site Safety Plan is the Job Hazard Analysis (JHA) section. The JHA form is a written document prepared by the contractor. The contractor must conduct a site and task assessment JHA to identify the major job steps and any potential safety or environmental hazards related to performance of the work, eliminate or implement controls for the potential hazards, and identify proper personal protective equipment for the task. The JHA shall be communicated to all contractor/subcontractor personnel on site.
The initial Job Hazard Assessment form shall be included in the contractor's Site Safety Plan and the current form shall be available at the construction site for reference.

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

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

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

A. Reviewing the safety issues detailed in the contract.
B. Reviewing the Site Safety Plan.
C. Reviewing any new issues or information that was not previously addressed.
D. Discussing planned inspections and audits of the site by QA&CS personnel.

VIII. EVALUATION DURING WORK IN PROGRESS

The Contractor's adherence to these Safety Requirements will be monitored throughout the project. This will be accomplished by the following:

A. Use of a safety checklist by a representative of the Construction Safety Unit or other designated DDC representative or Consultant during regular, unannounced inspections of the job site. Field Exit Conferences will be held with the RE/CPM, Contractor Project Safety Representatives.

B. The RE/CPM will continually monitor the safety and environmental performance of the contractor's employees and work methods. Deficiencies shall be brought to the attention of the contractor's representative on site for immediate correction. The DDC representative will maintain a written record of these deficiencies and have these records available upon request. Any critical deficiencies shall be immediately reported to QA&CS phone# (718) 391-1624 or (718) 391-1911.

C. If the Contractor's safety performance during the project is not up to DDC standards (safety performance measure, accident/incident rate, etc.) the Director – QA&CS, or his/her designee will meet with the Contractor's Project Safety Representative and or Project Safety Manager, the DDC Project Manager, the RE/CPM, and the DDC Environmental Specialist (if environmental issues are involved). The purpose of this meeting is to 1) determine the level of non-compliance; 2) explain and clarify the safety/environmental provisions; 3) agree on a future course of action to correct the deficiencies.

D. If the deficiencies continue to occur with inadequate attention by the contractor, this shall, among other remedies available, be grounds for default.

E. The contractor shall within 1 hour inform the RE/CPM/CM of all accidents/incidents including all fatalities, any injuries to employees or members of the general public, and property damage (e.g., structural damage, equipment rollovers, utility damage, loads dropped from crane). The RE/CPM shall notify the Construction Safety Unit as per DDC's Construction Safety Emergency and Accident Notification and Response Protocol and shall maintain a record of all contractor accidents/incidents for the project.

F. The Construction Safety Unit shall be notified within two (2) hours of the start of any NYS-DOL/ NYC-COSH/ OSHA/ EPA inspections.

IX. SAFETY PERFORMANCE EVALUATION

The contractor's safety record, including accident/incident history and DDC safety inspection results, will be considered as part of the Contractor's performance evaluation at the conclusion of the project. Poor safety performance during the course of the project shall be a reason to rate a Contractor unsatisfactory which may be reflected in the City's Vendex system and will be considered for future procurement actions as set forth in the City's Procurement Policy Board Rules.

CITY OF NEW YORK

STANDARD CONSTRUCTION CONTRACT

DECEMBER 2013

(NO TEXT ON THIS PAGE)

CITY OF NEW YORK
STANDARD CONSTRUCTION CONTRACT

TABLE OF CONTENTS

CHAPTER I
THE CONTRACT AND DEFINITIONS

ARTICLE 1.	**THE CONTRACT**	**1**
ARTICLE 2.	**DEFINITIONS**	**1**

CHAPTER II
THE WORK AND ITS PERFORMANCE

ARTICLE 3.	**CHARACTER OF THE WORK**	**4**
ARTICLE 4.	**MEANS AND METHODS OF CONSTRUCTION**	**4**
ARTICLE 5.	**COMPLIANCE WITH LAWS**	**5**
ARTICLE 6.	**INSPECTION**	**10**
ARTICLE 7.	**PROTECTION OF WORK AND OF PERSONS AND PROPERTY; NOTICES AND INDEMNIFICATION**	**11**

CHAPTER III
TIME PROVISIONS

ARTICLE 8.	**COMMENCEMENT AND PROSECUTION OF THE WORK**	**12**
ARTICLE 9.	**PROGRESS SCHEDULES**	**12**
ARTICLE 10.	**REQUESTS FOR INFORMATION OR APPROVAL**	**13**
ARTICLE 11.	**NOTICE OF CONDITIONS CAUSING DELAY AND DOCUMENTATION OF DAMAGES CAUSED BY DELAY**	**13**
ARTICLE 12.	**COORDINATION WITH OTHER CONTRACTORS**	**17**
ARTICLE 13.	**EXTENSION OF TIME FOR PERFORMANCE**	**18**
ARTICLE 14.	**COMPLETION AND FINAL ACCEPTANCE OF THE WORK**	**21**
ARTICLE 15.	**LIQUIDATED DAMAGES**	**22**
ARTICLE 16.	**OCCUPATION OR USE PRIOR TO COMPLETION**	**22**

CHAPTER IV
SUBCONTRACTS AND ASSIGNMENTS

ARTICLE 17.	**SUBCONTRACTS**	**23**
ARTICLE 18.	**ASSIGNMENTS**	**25**

CITY OF NEW YORK
STANDARD CONSTRUCTION CONTRACT

TABLE OF CONTENTS

CHAPTER V
CONTRACTOR'S SECURITY AND GUARANTY

ARTICLE 19.	**SECURITY DEPOSIT**	**26**
ARTICLE 20.	**PAYMENT GUARANTEE**	**26**
ARTICLE 21.	**RETAINED PERCENTAGE**	**29**
ARTICLE 22.	**INSURANCE**	**29**
ARTICLE 23.	**MONEY RETAINED AGAINST CLAIMS**	**35**
ARTICLE 24.	**MAINTENANCE AND GUARANTY**	**36**

CHAPTER VI
CHANGES, EXTRA WORK AND DOCUMENTATION OF CLAIM

ARTICLE 25.	**CHANGES**	**37**
ARTICLE 26.	**METHODS OF PAYMENT FOR OVERRUNS AND EXTRA WORK**	**37**
ARTICLE 27.	**RESOLUTION OF DISPUTES**	**40**
ARTICLE 28.	**RECORD KEEPING FOR EXTRA OR DISPUTED WORK OR WORK ON A TIME & MATERIALS BASIS**	**44**
ARTICLE 29.	**OMITTED WORK**	**45**
ARTICLE 30.	**NOTICE AND DOCUMENTATION OF COSTS AND DAMAGES; PRODUCTION OF FINANCIAL RECORDS**	**45**

CHAPTER VII
POWERS OF THE RESIDENT ENGINEER, THE ENGINEER OR ARCHITECT AND THE COMMISSIONER

ARTICLE 31.	**THE RESIDENT ENGINEER**	**46**
ARTICLE 32.	**THE ENGINEER OR ARCHITECT OR PROJECT MANAGER**	**47**
ARTICLE 33.	**THE COMMISSIONER**	**47**
ARTICLE 34.	**NO ESTOPPEL**	**48**

CHAPTER VIII
LABOR PROVISIONS

ARTICLE 35.	**EMPLOYEES**	**48**
ARTICLE 36.	**NO DISCRIMINATION**	**50**
ARTICLE 37.	**LABOR LAW REQUIREMENTS**	**52**
ARTICLE 38.	**PAYROLL REPORTS**	**57**
ARTICLE 39.	**DUST HAZARDS**	**58**

TABLE OF CONTENTS

CHAPTER IX
PARTIAL AND FINAL PAYMENTS

ARTICLE 40.	**CONTRACT PRICE**	**58**
ARTICLE 41.	**BID BREAKDOWN ON LUMP SUM**	**58**
ARTICLE 42.	**PARTIAL PAYMENTS**	**58**
ARTICLE 43.	**PROMPT PAYMENT**	**59**
ARTICLE 44.	**SUBSTANTIAL COMPLETION PAYMENT**	**59**
ARTICLE 45.	**FINAL PAYMENT**	**60**
ARTICLE 46.	**ACCEPTANCE OF FINAL PAYMENT**	**61**
ARTICLE 47.	**APPROVAL BY PUBLIC DESIGN COMMISSION**	**62**

CHAPTER X
CONTRACTOR'S DEFAULT

ARTICLE 48.	**COMMISSIONER'S RIGHT TO DECLARE CONTRACTOR IN DEFAULT**	**62**
ARTICLE 49.	**EXERCISE OF THE RIGHT TO DECLARE DEFAULT**	**64**
ARTICLE 50.	**QUITTING THE SITE**	**64**
ARTICLE 51.	**COMPLETION OF THE WORK**	**64**
ARTICLE 52.	**PARTIAL DEFAULT**	**64**
ARTICLE 53.	**PERFORMANCE OF UNCOMPLETED WORK**	**65**
ARTICLE 54.	**OTHER REMEDIES**	**65**

CHAPTER XI
MISCELLANEOUS PROVISIONS

ARTICLE 55.	**CONTRACTOR'S WARRANTIES**	**66**
ARTICLE 56.	**CLAIMS AND ACTIONS THEREON**	**66**
ARTICLE 57.	**INFRINGEMENT**	**66**
ARTICLE 58.	**NO CLAIM AGAINST OFFICERS, AGENTS OR EMPLOYEES**	**67**
ARTICLE 59.	**SERVICE OF NOTICES**	**67**
ARTICLE 60.	**UNLAWFUL PROVISIONS DEEMED STRICKEN FROM CONTRACT**	**67**
ARTICLE 61.	**ALL LEGAL PROVISIONS DEEMED INCLUDED**	**67**
ARTICLE 62.	**TAX EXEMPTION**	**67**
ARTICLE 63.	**INVESTIGATION(S) CLAUSE**	**69**
ARTICLE 64.	**TERMINATION BY THE CITY**	**71**
ARTICLE 65.	**CHOICE OF LAW, CONSENT TO JURISDICTION AND VENUE**	**73**

TABLE OF CONTENTS

CHAPTER XI (CONT'D)
MISCELLANEOUS PROVISIONS

ARTICLE 66.	**PARTICIPATION IN AN INTERNATIONAL BOYCOTT**	**74**
ARTICLE 67.	**LOCALLY BASED ENTERPRISE PROGRAM**	**74**
ARTICLE 68.	**ANTITRUST**	**75**
ARTICLE 69.	**MACBRIDE PRINCIPLES PROVISIONS**	**75**
ARTICLE 70	**ELECTRONIC FILING/NYC DEVELOPMENT HUB**	**77**
ARTICLE 71.	**PROHIBITION OF TROPICAL HARDWOODS**	**77**
ARTICLE 72.	**CONFLICTS OF INTEREST**	**78**
ARTICLE 73.	**MERGER CLAUSE**	**78**
ARTICLE 74.	**STATEMENT OF WORK**	**78**
ARTICLE 75.	**COMPENSATION TO BE PAID TO CONTRACTOR**	**78**
ARTICLE 76:	**ELECTRONIC FUNDS TRANSFER**	**78**
ARTICLE 77:	**RECORDS RETENTION**	**79**
ARTICLE 78:	**PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT**	**79**

SIGNATURES	**87**
ACKNOWLEDGMENT BY CORPORATION	**88**
ACKNOWLEDGMENT BY PARTNERSHIP	**88**
ACKNOWLEDGMENT BY INDIVIDUAL	**88**
ACKNOWLEDGMENT BY COMMISSIONER	**89**
AUTHORITY	**90**
COMPTROLLER'S CERTIFICATE	**90**
MAYOR'S CERTIFICATE	**91**
PERFORMANCE BOND #1	**92**
PERFORMANCE BOND #2	**96**
PAYMENT BOND	**100**

WITNESSETH:

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

CHAPTER I
THE CONTRACT AND DEFINITIONS

ARTICLE 1. THE CONTRACT

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

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

1.1.2 The Contract Drawings and Specifications;

1.1.3 The General Conditions and Special Conditions, if any;

1.1.4 The Contract;

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

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

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

ARTICLE 2. DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CHAPTER II
THE WORK AND ITS PERFORMANCE

ARTICLE 3. CHARACTER OF THE WORK

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

ARTICLE 4. MEANS AND METHODS OF CONSTRUCTION

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

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

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

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

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

ARTICLE 5. COMPLIANCE WITH LAWS

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

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

5.3 Noise Control Code provisions.

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

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

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

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

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

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

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

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

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

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

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

5.4.2 Ultra Low Sulfur Diesel Fuel

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

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

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

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

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

5.4.3 Best Available Technology

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

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

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

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

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

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

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

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

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

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

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

5.4.5 Compliance

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

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

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

5.4.6 Reporting

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 6. INSPECTION

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CHAPTER III
TIME PROVISIONS

ARTICLE 8. COMMENCEMENT AND PROSECUTION OF THE WORK

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

ARTICLE 9. PROGRESS SCHEDULES

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

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

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

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

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

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

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

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

ARTICLE 10. REQUESTS FOR INFORMATION OR APPROVAL

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

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

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

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

11.1.1 Within seven (7) **Days** after the commencement of such condition, the **Contractor** must notify the **Engineer** in writing of the existence, nature and effect of such condition upon the approved progress schedule and the **Work**, and must state why and in what respects, if any, the condition is causing or may cause a delay.

11.1.2 If the **Contractor** shall claim to be sustaining damages for delay as provided for in this Article 11, within forty-five (45) **Days** from the time such damages are first incurred, and every thirty (30) **Days** thereafter for as long as such damages are being incurred, the **Contractor** shall submit to the **Commissioner** verified written statements of the details and the amounts of such damages, together with documentary evidence of such damages, ("statement of delay damages") as further detailed in Article 11.6. The **Contractor** may submit any of the above statements within such additional time as may be granted by the **Commissioner** in writing upon written request therefor. On failure of the **Contractor** to strictly comply with all of the foregoing provisions, such claims shall be deemed waived and no right to recover on such claims shall exist. Damages that the **Contractor** may claim in any action arising under or by reason of this **Contract** shall not be different from or in excess of the statements made and documentation provided pursuant to this Article 11.

11.1.3 Within 60 days of submission of the final verified statement of claims pursuant to Article 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 provided, however, that the amount of compensation due to the **Contractor** will not be determined until the **Commissioner** determines that the **Work** is delayed after the date set for substantial completion.

11.2 Failure of the **Contractor** to strictly comply with the requirements of Article 11.1.1 may, in the discretion of the **Commissioner**, be deemed sufficient cause to deny any extension of time on account of delay arising out of such condition. Failure of the **Contractor** to strictly comply with the requirements of Articles 11.1.1 and 11.1.2 shall be deemed a conclusive waiver by the **Contractor** of any and all claims for damages for delay arising from such condition and no right to recover on such claims shall exist.

11.3 When appropriate and directed by the **Engineer**, the progress schedule shall be revised by the **Contractor** until finally approved by the **Engineer**. The revised progress schedule must be strictly adhered to by the **Contractor**.

11.4 Compensable Delays

11.4.1 The **Contractor** agrees to make claim only for additional costs attributable to delay in the performance of this **Contract** necessarily extending the time for completion of the **Work** or resulting from acceleration directed by the **Commissioner** and required to maintain the **Project** schedule, occasioned solely by any act or omission to act of the **City** listed below. The **Contractor** also agrees that delay from any other cause shall be compensated, if at all, solely by an extension of time to complete the performance of the **Work**.

11.4.1.1 The failure of the **City** to take reasonable measures to coordinate and progress the **Work**, except that the City shall not be responsible for the **Contractor's** obligation to coordinate and progress the **Work** of its **Subcontractors**.

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

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

11.4.1.4 The issuance by the **Engineer** of a stop work order relative to a substantial portion of the **Work** for a period exceeding thirty (30) **Days**, that was not brought about through any action or omission of the **Contractor**.

11.4.1.5 Differing site conditions that were neither known nor reasonably ascertainable on a pre-bid inspection of the **Site** or review of the bid documents or other publicly available sources, and that are not ordinarily encountered in the **Project's** geographical area or neighborhood or in the type of **Work** to be performed.

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

11.4.1.7 Delays not contemplated by the parties;

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

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

11.4.2 No claim may be made for any alleged delay in **Substantial Completion** of the **Work** by a date earlier than the date of **Substantial Completion** provided for in Schedule A unless there is a provision in the **Contract** providing for additional compensation for early completion. No claim may be made for any alleged delay in **Substantial Completion** of the **Work** if the work is substantially completed by the date of **Substantial Completion** provided for in Schedule A unless acceleration has been directed by the **Commissioner** to meet the date of **Substantial Completion** set forth in Schedule A.

11.4.3 The provisions of this Article 11 apply only to claims for additional costs attributable to delay and do not preclude determinations by the **Commissioner** allowing reimbursements for additional costs for **Extra Work** pursuant to Articles 25 and 26 of this **Contract**. To the extent that any cost attributable to delay is reimbursed as part of a change order, no additional claim for compensation under this Article 11 shall be allowed.

11.5 Non-Compensable Delays. The **Contractor** agrees to make no claim for, and is deemed to have included in its bid prices for the various items of the **Contract**, the extra/additional costs attributable to any delays caused by or attributable to the items set forth below. For such items, the **Contractor** shall be compensated, if at all, solely by an extension of time to complete the performance of the **Work**, in accordance with the provisions of Article 13. Such extensions of time will be granted, if at all, pursuant to the grounds set forth in Article 13.3.

11.5.1 The acts or omissions of any third parties, including but not limited to **Other Contractors**, public/ governmental bodies (other than **City Agencies**), utilities or private enterprises, who are disclosed in the **Contract Documents** or are ordinarily encountered or generally recognized as related to the **Work**;

11.5.2 Any situation which was within the contemplation of the parties at the time of entering into the **Contract**, including any delay indicated or disclosed in the **Contract Documents** or generally recognized as related to the nature of the **Work**, and/or the existence of any facility or appurtenance owned, operated or maintained by any third party, as indicated or disclosed in the **Contract Documents** or ordinarily encountered or generally recognized as related to the nature of the **Work**;

11.5.3 Restraining orders, injunctions or judgments issued by a court which were caused by a Contractor's submission, action or inaction or by a Contractor's **Means and Methods of**

Construction, or by third parties, unless such order, injunction or judgment was the result of an action or omission by the **City**;

11.5.4 Any labor boycott, strike, picketing, lockout or similar situation;

11.5.5 Any shortages of supplies or materials, or unavailability of equipment, required by the **Contract Work**;

11.5.6 Climatic conditions, storms, floods, droughts, tidal waves, fires, hurricanes, earthquakes, landslides or other catastrophes or acts of God, or acts of war or of the public enemy or terrorist acts, including the **City's** reasonable responses thereto; and

11.5.7 **Extra Work** which does not significantly affect the overall completion of the **Contract**, reasonable delays in the review or issuance of change orders or field orders and/or in shop drawing reviews or approvals.

11.6 Required Content of Submission of Statement of Delay Damages

11.6.1 In the verified written statement of delay damages required by Article 11.1.2, the following information shall be provided by the **Contractor**:

11.6.1.1 For each delay, the start and end dates of the claimed periods of delay and, in addition, a description of the operations that were delayed, an explanation of how they were delayed, and the reasons for the delay, including identifying the applicable act or omission of the City listed in Article 11.4.

11.6.1.2 A detailed factual statement of the claim providing all necessary dates, locations and items of **Work** affected by the claim.

11.6.1.3 The amount of additional compensation sought and a breakdown of that amount into categories as described in Article 26.2, subject to the limitations set forth in Article 11.7.

11.6.1.4 Any additional information requested by the **Commissioner**.

11.7 Recoverable Costs

11.7.1 Delay damages may be recoverable for the following costs actually and necessarily incurred in the performance of the **Work**:

11.7.1.1 Direct labor, including payroll taxes (subject to statutory wage caps) and supplemental benefits, based on time and materials records;

11.7.1.2 Necessary materials (including transportation to the **Site**), based on time and material records;

11.7.1.3 Reasonable rental value of necessary plant and equipment other than small tools, plus fuel/energy costs according to the applicable formula set forth in Articles 26.2.4 and/or 26.2.8, based on time and material records;

11.7.1.4 Insurance and bond costs;

11.7.1.5 Extended field office costs;

11.7.1.6 Extended **Site** overhead; and

11.7.1.7 Extended home office overhead.

11.7.2 Recoverable Subcontractor Costs. When the **Work** is performed by a **Subcontractor**, the **Contractor** may be paid the actual and necessary costs of such subcontracted **Work** as outlined above in Articles 11.7.1.1 through 11.7.1.6, and an

additional overhead of five (5%) percent of the costs outlined in Articles 11.7.1.1 through 11.7.1.3.

11.7.3 Non-Recoverable Costs. The parties agree that the **City** will have no liability for the following items and the **Contractor** agrees it shall make no claim for the following items:

11.7.3.1 Profit, or loss of anticipated or unanticipated profit;

11.7.3.2 Consequential damages, including but not limited to interest on monies in dispute, including interest which is paid on such monies, loss of bonding capacity, bidding opportunities, or interest in investment, or any resulting insolvency;

11.7.3.3 Indirect costs or expenses of any nature;

11.7.3.4 Direct or indirect costs attributable to performance of **Work** where the **Contractor**, because of situations or conditions within its control, has not progressed the **Work** in a satisfactory manner; and

11.7.3.5 Attorneys' fees and dispute and claims preparation expenses.

11.8 Determinations under this Article 11 are not subject to the jurisdiction of the Contract Dispute Resolution Board pursuant to the dispute resolution process set forth in Article 27.

11.9 If the parties agree, pursuant to Article 11.1.3 above, that a compensable delay has occurred and agree on the amount of compensation, payment may be made pursuant to a written change order. Payment pursuant to such change order is subject to pre-audit by the **Engineering Audit Officer,** and may be post-audited by the **Comptroller** and/or the **Agency**.

ARTICLE 12. COORDINATION WITH OTHER CONTRACTORS

12.1 During the progress of the **Work, Other Contractors** may be engaged in performing other work or may be awarded other contracts for additional work on this **Project.** In that event, the **Contractor** shall coordinate the **Work** to be done hereunder with the work of such **Other Contractors** and the **Contractor** shall fully cooperate with such **Other Contractors** and carefully fit its own **Work** to that provided under other contracts as may be directed by the **Engineer**. The **Contractor** shall not commit or permit any act which will interfere with the performance of work by any **Other Contractors**.

12.2 If the **Engineer** determines that the **Contractor** is failing to coordinate its **Work** with the work of **Other Contractors** as the **Engineer** has directed, then the **Commissioner** shall have the right to withhold any payments otherwise due hereunder until the **Contractor** completely complies with the **Engineer's** directions.

12.3 The **Contractor** shall notify the **Engineer** in writing if any **Other Contractor** on this **Project** is failing to coordinate its work with the **Work** of this **Contract.** If the **Engineer** finds such charges to be true, the **Engineer** shall promptly issue such directions to the **Other Contractor** with respect thereto as the situation may require. The **City** shall not, however, be liable for any damages suffered by any **Other Contractor's** failure to coordinate its work with the **Work** of this **Contract** or by reason of the **Other Contractor's** failure to promptly comply with the directions so issued by the **Engineer**, or by reason of any **Other Contractor's** default in performance, it being understood that the **City** does not guarantee the responsibility or continued efficiency of any contractor. The **Contractor** agrees to make no claim against

the **City** for any damages relating to or arising out of any directions issued by the **Engineer** pursuant to this Article 12 (including but not limited to the failure of any **Other Contractor** to comply or promptly comply with such directions), or the failure of the **Engineer** to issue any directions, or the failure of any **Other Contractor** to coordinate its work, or the default in performance of any **Other Contractor**.

12.4 The **Contractor** shall indemnify and hold the **City** harmless from any and all claims or judgments for damages and from costs and expenses to which the **City** may be subjected or which it may suffer or incur by reason of the **Contractor's** failure to comply with the **Engineer's** directions promptly; and the **Comptroller** shall have the right to exercise the powers reserved in Article 23 with respect to any claims which may be made for damages due to the **Contractor's** failure to comply with the **Engineer's** directions promptly. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.5 Should the **Contractor** sustain any damage through any act or omission of any **Other Contractor** having a contract with the **City** for the performance of work upon the **Site** or of work which may be necessary to be performed for the proper prosecution of the **Work** to be performed hereunder, or through any act or omission of a subcontractor of such **Other Contractor**, the **Contractor** shall have no claim against the **City** for such damage, but shall have a right to recover such damage from the **Other Contractor** under the provision similar to the following provisions which apply to this **Contract** and have been or will be inserted in the contracts with such **Other Contractors**:

> 12.5.1 Should any **Other Contractor** having or who shall hereafter have a contract with the **City** for the performance of work upon the **Site** sustain any damage through any act or omission of the **Contractor** hereunder or through any act or omission of any **Subcontractor** of the **Contractor**, the **Contractor** agrees to reimburse such **Other Contractor** for all such damages and to defend at its own expense any action based upon such claim and if any judgment or claim (even if the allegations of the action are without merit) against the **City** shall be allowed the **Contractor** shall pay or satisfy such judgment or claim and pay all costs and expenses in connection therewith and agrees to indemnify and hold the **City** harmless from all such claims. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.6 The **City's** right to indemnification hereunder shall in no way be diminished, waived or discharged by its recourse to assessment of liquidated damages as provided in Article 15, or by the exercise of any other remedy provided for by **Contract** or by **Law**.

ARTICLE 13. EXTENSION OF TIME FOR PERFORMANCE

13.1 If performance by the **Contractor** is delayed for a reason set forth in Article 13.3, the **Contractor** may be allowed a reasonable extension of time in conformance with this Article 13 and the **PPB** Rules.

13.2 Any extension of time may be granted only by the **ACCO** or by the Board for the Extension of Time (hereafter "Board") (as set forth below) upon written application by the **Contractor**.

13.3 Grounds for Extension: If such application is made, the **Contractor** shall be entitled to an extension of time for delay in completion of the **Work** caused solely:

> 13.3.1 By the acts or omissions of the **City**, its officials, agents or employees; or

13.3.2 By the act or omissions of **Other Contractors** on this **Project**; or

13.3.3 By supervening conditions entirely beyond the control of either party hereto (such as, but not limited to, acts of God or the public enemy, excessive inclement weather, war or other national emergency making performance temporarily impossible or illegal, or strikes or labor disputes not brought about by any act or omission of the **Contractor**).

13.3.4 The **Contractor** shall, however, be entitled to an extension of time for such causes only for the number of **Days** of delay which the **ACCO** or the Board may determine to be due solely to such causes, and then only if the **Contractor** shall have strictly complied with all of the requirements of Articles 9 and 10.

13.4 The **Contractor** shall not be entitled to receive a separate extension of time for each of several causes of delay operating concurrently, but, if at all, only for the actual period of delay in completion of the **Work** as determined by the **ACCO** or the Board, irrespective of the number of causes contributing to produce such delay. If one of several causes of delay operating concurrently results from any act, fault or omission of the **Contractor** or of its **Subcontractors** or **Materialmen**, and would of itself (irrespective of the concurrent causes) have delayed the **Work**, no extension of time will be allowed for the period of delay resulting from such act, fault or omission.

13.5 The determination made by the **ACCO** or the Board on an application for an extension of time shall be binding and conclusive on the **Contractor**.

13.6 The **ACCO** or the Board acting entirely within their discretion may grant an application for an extension of time for causes of delay other than those herein referred.

13.7 Permitting the **Contractor** to continue with the **Work** after the time fixed for its completion has expired, or after the time to which such completion may have been extended has expired, or the making of any payment to the **Contractor** after such time, shall in no way operate as a waiver on the part of the **City** of any of its rights under this **Contract**.

13.8 Application for Extension of Time:

13.8.1 Before the **Contractor's** time extension request will be considered, the **Contractor** shall notify the **ACCO** of the condition which allegedly has caused or is causing the delay, and shall submit a written application to the **ACCO** identifying:

13.8.1(a) The **Contractor**; the registration number; and **Project** description;

13.8.1(b) Liquidated damage assessment rate, as specified in the **Contract**;

13.8.1(c) Original total bid price;

13.8.1(d) The original **Contract** start date and completion date;

13.8.1(e) Any previous time extensions granted (number and duration); and

13.8.1(f) The extension of time requested.

13.8.2 In addition, the application for extension of time shall set forth in detail:

13.8.2(a) The nature of each alleged cause of delay in completing the **Work**;

13.8.2(b) The date upon which each such cause of delay began and ended and the number of **Days** attributable to each such cause;

13.8.2(c) A statement that the **Contractor** waives all claims except for those delineated in the application, and the particulars of any claims which the **Contractor** does not agree to waive. For time extensions for **Substantial Completion** and final completion payments, the application shall include a detailed statement of the dollar amounts of each element of claim item reserved; and

13.8.2(d) A statement indicating the **Contractor's** understanding that the time extension is granted only for purposes of permitting continuation of **Contract** performance and payment for **Work** performed and that the **City** retains its right to conduct an investigation and assess liquidated damages as appropriate in the future.

13.9 Analysis and Approval of Time Extensions:

13.9.1 For time extensions for partial payments, a written determination shall be made by the **ACCO** who may, for good and sufficient cause, extend the time for the performance of the **Contract** as follows:

13.9.1(a) If the **Work** is to be completed within six (6) months, the time for performance may be extended for sixty (60) **Days**;

13.9.1(b) If the **Work** is to be completed within less than one (1) year but more than six (6) months, an extension of ninety (90) **Days** may be granted;

13.9.1(c) If the **Contract** period exceeds one (1) year, besides the extension granted in Article 13.9.1(b), an additional thirty (30) **Days** may be granted for each multiple of six (6) months involved beyond the one (1) year period; or

13.9.1(d) If exceptional circumstances exist, the **ACCO** may extend the time for performance beyond the extensions in Articles 13.9.1(a), 13.9.1(b), and 13.9.1(c). In that event, the **ACCO** shall file with the Mayor's Office of Contract Services a written explanation of the exceptional circumstances.

13.9.2 For extensions of time for **Substantial Completion** and final completion payments, the **Engineer**, in consultation with the **ACCO**, shall prepare a written analysis of the delay (including a preliminary determination of the causes of delay, the beginning and end dates for each such cause of delay, and whether the delays are excusable under the terms of this **Contract**). The report shall be subject to review by and approval of the Board, which shall have authority to question its analysis and determinations and request additional facts or documentation. The report as reviewed and made final by the Board shall be made a part of the **Agency** contract file. Neither the report itself nor anything contained therein shall operate as a waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

13.9.3 Approval Mechanism for Time Extensions for **Substantial Completion** or Final Completion Payments: An extension shall be granted only with the approval of the Board which is comprised of the **ACCO** of the **Agency**, the **City** Corporation Counsel, and the **Comptroller**, or their authorized representatives.

13.9.4 Neither the granting of any application for an extension of time to the **Contractor** or any **Other Contractor** on this **Project** nor the papers, records or reports related to any application for or grant of an extension of time or determination related thereto shall be referred to or offered in evidence by the **Contractor** or its attorneys in any action or proceeding.

13.10 No Damage for Delay: The **Contractor** agrees to make no claim for damages for delay in the performance of this **Contract** occasioned by any act or omission to act of the **City** or any of its representatives, except as provided for in Article 11.

ARTICLE 14. COMPLETION AND FINAL ACCEPTANCE OF THE WORK

14.1 Date for **Substantial Completion**: The **Contractor** shall substantially complete the **Work** within the time fixed in Schedule A of the General Conditions, or within the time to which such **Substantial Completion** may be extended.

14.2 Determining the Date of **Substantial Completion**: The **Work** will be deemed to be substantially complete when the two conditions set forth below have been met.

14.2.1 Inspection: The **Engineer** has inspected the **Work** and has made a written determination that it is substantially complete.

14.2.2 Approval of **Final Approved Punch List** and Date for **Final Acceptance**: Following inspection of the **Work**, the **Engineer** shall furnish the **Contractor** with a final punch list, specifying all items of **Work** to be completed and proposing dates for the completion of each specified item of **Work**. The **Contractor** shall then submit in writing to the **Engineer** within ten (10) **Days** of the **Engineer** furnishing the final punch list either acceptance of the dates or proposed alternative dates for the completion of each specified item of **Work**. If the **Contractor** proposes alternative dates, then, within a reasonable time after receipt, the **Engineer**, in a written notification to the **Contractor**, shall approve the **Contractor's** completion dates or, if they are unable to agree, the Engineer shall establish dates for the completion of each item of **Work**. If the **Contractor** neither accepts the dates nor proposes alternative dates within ten (10) **Days**, the schedule proposed by the **Engineer** shall be deemed accepted. The latest completion date specified shall be the date for **Final Acceptance** of the **Work**.

14.3 Date of **Substantial Completion**. The date of approval of the **Final Approved Punch List**, shall be the date of **Substantial Completion**. The date of approval of the **Final Approved Punch List** shall be either (a) if the **Contractor** approves the final punch list and proposed dates for completion furnished by the **Engineer**, the date of the **Contractor**'s approval; or (b) if the **Contractor** neither accepts the dates nor proposes alternative dates, ten (10) **Days** after the **Engineer** furnishes the **Contractor** with a final punch list and proposed dates for completion; or (c) if the **Contractor** proposes alternative dates, the date that the **Engineer** sends written notification to the **Contractor** either approving the **Contractor**'s proposed alternative dates or establishing dates for the completion for each item of **Work**.

14.4 Determining the Date of **Final Acceptance**: The **Work** will be accepted as final and complete as of the date of the **Engineer's** inspection if, upon such inspection, the **Engineer** finds that all items on the **Final Approved Punch List** are complete and no further **Work** remains to be done. The **Commissioner** will then issue a written determination of **Final Acceptance**.

14.5 Request for Inspection: Inspection of the **Work** by the **Engineer** for the purpose of **Substantial Completion** or **Final Acceptance** shall be made within ten (10) **Days** after receipt of the **Contractor's** written request therefor.

14.6 Request for Re-inspection: If upon inspection for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer** determines that there are items of **Work** still to be performed, the **Contractor** shall promptly perform them and then request a re-inspection. If upon re-inspection, the **Engineer** determines that the **Work** is substantially complete or finally accepted, the date of such re-inspection shall be the date of **Substantial Completion** or **Final Acceptance**. Re-inspection by the **Engineer** shall be made within ten (10) **Days** after receipt of the **Contractor's** written request therefor.

14.7 Initiation of Inspection by the **Engineer**: If the **Contractor** does not request inspection or re-inspection of the **Work** for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer** may initiate such inspection or re-inspection.

ARTICLE 15. LIQUIDATED DAMAGES

15.1 In the event the **Contractor** fails to substantially complete the **Work** within the time fixed for such **Substantial Completion** in Schedule A of the General Conditions, plus authorized time extensions, or if the **Contractor**, in the sole determination of the **Commissioner**, has abandoned the **Work**, the **Contractor** shall pay to the **City** the sum fixed in Schedule A of the General Conditions, for each and every **Day** that the time consumed in substantially completing the **Work** exceeds the time allowed therefor; which said sum, in view of the difficulty of accurately ascertaining the loss which the **City** will suffer by reason of delay in the **Substantial Completion** of the **Work** hereunder, is hereby fixed and agreed as the liquidated damages that the **City** will suffer by reason of such delay, and not as a penalty. This Article 15 shall also apply to the **Contractor** whether or not the **Contractor** is defaulted pursuant to Chapter X of this **Contract**. Neither the failure to assess liquidated damages nor the granting of any time extension shall operate as a waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

15.2 Liquidated damages received hereunder are not intended to be nor shall they be treated as either a partial or full waiver or discharge of the **City's** right to indemnification, or the **Contractor's** obligation to indemnify the **City**, or to any other remedy provided for in this **Contract** or by **Law**.

15.3 The **Commissioner** may deduct and retain out of the monies which may become due hereunder, the amount of any such liquidated damages; and in case the amount which may become due hereunder shall be less than the amount of liquidated damages suffered by the **City**, the **Contractor** shall be liable to pay the difference.

ARTICLE 16. OCCUPATION OR USE PRIOR TO COMPLETION

16.1 Unless otherwise provided for in the **Specifications**, the **Commissioner** may take over, use, occupy or operate any part of the **Work** at any time prior to **Final Acceptance**, upon written notification to the **Contractor**. The **Engineer** shall inspect the part of the **Work** to be taken over, used, occupied, or operated, and will furnish the **Contractor** with a written statement of the **Work**, if any, which remains to be performed on such part. The **Contractor** shall not object to, nor interfere with, the **Commissioner's** decision to exercise the rights granted by Article 16. In the event the **Commissioner** takes over, uses, occupies, or operates any part of the **Work:**

16.1.1 the **Engineer** shall issue a written determination of **Substantial Completion** with respect to such part of the **Work**;

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

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

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

CHAPTER IV
SUBCONTRACTS AND ASSIGNMENTS

ARTICLE 17. SUBCONTRACTS

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

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

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

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

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

17.4 If an approved **Subcontractor** elects to subcontract any portion of its subcontract, the proposed sub-subcontract shall be submitted in the same manner as directed above.

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

17.6 Before entering into any subcontract hereunder, the **Contractor** shall provide the proposed **Subcontractor** with a complete copy of this document and inform the proposed **Subcontractor** fully and completely of all provisions and requirements of this **Contract** relating either directly or indirectly to the **Work** to be performed and the materials to be furnished under such subcontract, and every such **Subcontractor** shall expressly stipulate that all labor performed and materials furnished by the **Subcontractor** shall strictly comply with the requirements of this **Contract**.

17.7 Documents given to a prospective **Subcontractor** for the purpose of soliciting the **Subcontractor's** bid shall include either a copy of the bid cover or a separate information sheet setting forth the **Project** name, the **Contract** number (if available), the **Agency** (as noted in Article 2.1.6), and the **Project's** location.

17.8 The **Commissioner's** approval of a **Subcontractor** shall not relieve the **Contractor** of any of its responsibilities, duties, and liabilities hereunder. The **Contractor** shall be solely responsible to the **City** for the acts or defaults of its **Subcontractor** and of such **Subcontractor's** officers, agents, and employees, each of whom shall, for this purpose, be deemed to be the agent or employee of the **Contractor** to the extent of its subcontract.

17.9 If the **Subcontractor** fails to maintain the necessary facilities, skill, integrity, past experience, and financial resources (other than due to the **Contractor's** failure to make payments where required) to perform the **Work** in accordance with the terms and conditions of this **Contract**, the **Contractor** shall promptly notify the **Commissioner** and replace such **Subcontractor** with a newly approved **Subcontractor** in accordance with this Article 17.

17.10 The **Contractor** shall be responsible for ensuring that all **Subcontractors** performing **Work** at the **Site** maintain all insurance required by **Law**.

17.11 The **Contractor** shall promptly, upon request, file with the **Engineer** a conformed copy of the subcontract and its cost. The subcontract shall provide the following:

17.11.1 Payment to **Subcontractors**: The agreement between the **Contractor** and its **Subcontractor** shall contain the same terms and conditions as to method of payment for **Work**, labor, and materials, and as to retained percentages, as are contained in this **Contract**.

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

17.11.3 Section 6-123 of the Administrative Code: Pursuant to the requirements of Section 6-123 of the Administrative Code, every agreement between the **Contractor** and a **Subcontractor** in excess of fifty thousand ($50,000) dollars shall include a provision that the **Subcontractor** shall not engage in any unlawful discriminatory practice as defined in Title VIII of the Administrative Code (Section 8-101 *et seq.*).

17.11.4 All requirements required pursuant to federal and/or state grant agreement(s), if applicable to the **Work**.

17.12 The **Commissioner** may deduct from the amounts certified under this **Contract** to be due to the **Contractor**, the sum or sums due and owing from the **Contractor** to the **Subcontractors** according to the terms of the said subcontracts, and in case of dispute between the **Contractor** and its **Subcontractor**, or **Subcontractors**, as to the amount due and owing, the **Commissioner** may deduct and withhold from the amounts certified under this **Contract** to be due to the **Contractor** such sum or sums as may be claimed by such **Subcontractor**, or **Subcontractors**, in a sworn affidavit, to be due and owing until such time as such claim or claims shall have been finally resolved.

17.13 On contracts where performance bonds and payment bonds are executed, the **Contractor** shall include on each requisition for payment the following data: **Subcontractor's** name, value of the subcontract, total amount previously paid to **Subcontractor** for **Work** previously requisitioned, and the amount, including retainage, to be paid to the **Subcontractor** for **Work** included in the requisition.

17.14 On **Contracts** where performance bonds and payment bonds are not executed, the **Contractor** shall include with each requisition for payment submitted hereunder, a signed statement from each and every **Subcontractor** and/or **Materialman** for whom payment is requested in such requisition. Such signed statement shall be on the letterhead of the **Subcontractor** and/or **Materialman** for whom payment is requested and shall (i) verify that such **Subcontractor** and/or **Materialman** has been paid in full for all **Work** performed and/or material supplied to date, exclusive of any amount retained and any amount included on the current requisition, and (ii) state the total amount of retainage to date, exclusive of any amount retained on the current requisition.

ARTICLE 18. ASSIGNMENTS

18.1 The **Contractor** shall not assign, transfer, convey or otherwise dispose of this **Contract**, or the right to execute it, or the right, title or interest in or to it or any part thereof, or assign, by power of attorney or otherwise any of the monies due or to become due under this **Contract**, unless the previous written consent of the **Commissioner** shall first be obtained thereto, and the giving of any such consent to a particular assignment shall not dispense with the necessity of such consent to any further or other assignments.

18.2 Such assignment, transfer, conveyance or other disposition of this **Contract** shall not be valid until filed in the office of the **Commissioner** and the **Comptroller**, with the written consent of the **Commissioner** endorsed thereon or attached thereto.

18.3 Failure to obtain the previous written consent of the **Commissioner** to such an assignment, transfer, conveyance or other disposition, may result in the revocation and annulment of this **Contract**. The **City** shall thereupon be relieved and discharged from any further liability to the **Contractor**, its assignees, transferees or sublessees, who shall forfeit and lose all monies therefor earned under the **Contract**, except so much as may be required to pay the **Contractor's** employees.

18.4 The provisions of this clause shall not hinder, prevent, or affect an assignment by the **Contractor** for the benefit of its creditors made pursuant to the **Laws** of the State of New York.

18.5 This **Contract** may be assigned by the **City** to any corporation, agency or instrumentality having authority to accept such assignment.

CHAPTER V
CONTRACTOR'S SECURITY AND GUARANTEE

ARTICLE 19. SECURITY DEPOSIT

19.1 If performance and payment bonds are required, the **City** shall retain the bid security to ensure that the successful bidder executes the **Contract** and furnishes the required payment and performance security within ten (10) **Days** after notice of the award of the **Contract**. If the successful bidder fails to execute the **Contract** and furnish the required payment and performance security, the **City** shall retain such bid security as set forth in the Information for Bidders. If the successful bidder executes the **Contract** and furnishes the required payment and performance security, the **City** shall return the bid security within a reasonable time after the furnishing of such bonds and execution of the **Contract** by the **City**.

19.2 If performance and payment bonds are not required, the bid security shall be retained by the **City** as security for the **Contractor**'s faithful performance of the **Contract**. If partial payments are provided, the bid security will be returned to the **Contractor** after the sum retained under Article 21 equals the amount of the bid security, subject to other provisions of this **Contract**. If partial payments are not provided, the bid security will be released when final payment is certified by the **City** for payment.

19.3 If the **Contractor** is declared in default under Article 48 prior to the return of the deposit, or if any claim is made such as referred to in Article 23, the amount of such deposit, or so much thereof as the **Comptroller** may deem necessary, may be retained and then applied by the **Comptroller**:

19.3.1 To compensate the **City** for any expense, loss or damage suffered or incurred by reason of or resulting from such default, including the cost of re-letting and liquidated damages; or

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

ARTICLE 20. PAYMENT GUARANTEE

20.1 On **Contracts** where one hundred (100%) percent performance bonds and payment bonds are executed, this Article 20 does not apply.

20.2 In the event the terms of this **Contract** do not require the **Contractor** to provide a payment bond or where the **Contract** does not requite a payment bond for one hundred (100%) percent of the **Contract** price, the **City** shall, in accordance with the terms of this Article 20, guarantee payment of all lawful claims for:

20.2.1 Wages and compensation for labor performed and/or services rendered; and

20.2.2 Materials, equipment, and supplies provided, whether incorporated into the **Work** or not, when demands have been filed with the **City** as provided hereinafter by any person, firm, or corporation which furnished labor, material, equipment, supplies, or any combination thereof, in connection with the **Work** performed hereunder (hereinafter referred to as the "beneficiary") at the direction of the **City** or the **Contractor**.

20.3 The provisions of Article 20.2 are subject to the following limitations and conditions:

20.3.1 If the **Contractor** provides a payment bond for a value that is less than one hundred (100%) percent of the value of the **Contract Work**, the payment bond provided by the **Contractor** shall be primary (and non-contributing) to the payment guarantee provided under this Article 20.

20.3.2 The guarantee is made for the benefit of all beneficiaries as defined in Article 20.2 provided that those beneficiaries strictly adhere to the terms and conditions of Article 20.3.4 and 20.3.5.

20.3.3 Nothing in this Article 20 shall prevent a beneficiary providing labor, services or material for the **Work** from suing the **Contractor** for any amounts due and owing the beneficiary by the **Contractor**.

20.3.4 Every person who has furnished labor or material, to the **Contractor** or to a **Subcontractor** of the **Contractor**, in the prosecution of the **Work** and who has not been paid in full therefor before the expiration of a period of ninety (90) **Days** after the date on which the last of the labor was performed or material was furnished by him/her for which the claim is made, shall have the right to sue on this payment guarantee in his/her own name for the amount, or the balance thereof, unpaid at the time of commencement of the action; provided, however, that a person having a direct contractual relationship with a **Subcontractor** of the **Contractor** but no contractual relationship express or implied with the **Contractor** shall not have a right of action upon the guarantee unless he/she shall have given written notice to the **Contractor** within one hundred twenty (120) **Days** from the date on which the last of the labor was performed or the last of the material was furnished, for which his/her claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the material was furnished or for whom the labor was performed. The notice shall be served by delivering the same personally to the **Contractor** or by mailing the same by registered mail, postage prepaid, in an envelope addressed to the **Contractor** at any place where it maintains an office or conducts its business; provided, however, that where such notice is actually received by the **Contractor** by other means, such notice shall be deemed sufficient.

20.3.5 Except as provided in Labor Law Section 220-g, no action on this payment guarantee shall be commenced after the expiration of the one-year limitations period set forth in Section 137(4)(b) of the State Finance Law.

20.3.6 The **Contractor** shall promptly forward to the **City** any notice or demand received pursuant to Article 20.3.4. The **Contractor** shall inform the **City** of any defenses to the notice or demand and shall forward to the **City** any documents the **City** requests concerning the notice or demand.

20.3.7 All demands made against the **City** by a beneficiary of this payment guarantee shall be presented to the **Engineer** along with all written documentation concerning the demand which the **Engineer** deems reasonably appropriate or necessary, which may include, but shall not be limited to: the subcontract; any invoices presented to the **Contractor** for payment; the notarized statement of the beneficiary that the demand is due and payable, that a request for payment has been made of the **Contractor** and that the demand has not been paid by the **Contractor** within the time allowed for such payment by the subcontract; and copies of any correspondence between the beneficiary and the **Contractor** concerning such demand. The **City** shall notify the **Contractor** that a demand has been made. The **Contractor** shall inform the **City** of any defenses to the demand and shall forward to the **City** any documents the **City** requests concerning the demand.

20.3.8 The **City** shall make payment only if, after considering all defenses presented by the **Contractor**, it determines that the payment is due and owing to the beneficiary making the demand.

20.3.9 No beneficiary shall be entitled to interest from the **City**, or to any other costs, including, but not limited to, attorneys' fees, except to the extent required by State Finance Law Section 137.

20.4 Upon the receipt by the **City** of a demand pursuant to this Article 20, the **City** may withhold from any payment otherwise due and owing to the **Contractor** under this **Contract** an amount sufficient to satisfy the demand.

20.4.1 In the event the **City** determines that the demand is valid, the **City** shall notify the **Contractor** of such determination and the amount thereof and direct the **Contractor** to immediately pay such amount to the beneficiary. In the event the **Contractor**, within seven (7) **Days** of receipt of such notification from the **City**, fails to pay the beneficiary, such failure shall constitute an automatic and irrevocable assignment of payment by the **Contractor** to the beneficiary for the amount of the demand determined by the **City** to be valid. The **Contractor**, without further notification or other process, hereby gives its unconditional consent to such assignment of payment to the beneficiary and authorizes the **City**, on its behalf, to take all necessary actions to implement such assignment of payment, including without limitation the execution of any instrument or documentation necessary to effectuate such assignment.

20.4.2In the event that the amount otherwise due and owing to the **Contractor** by the **City** is insufficient to satisfy such demand, the **City** may, at its option, require payment from the **Contractor** of an amount sufficient to cover such demand and exercise any other right to require or recover payment which the **City** may have under **Law** or **Contract**.

20.4.3 In the event the **City** determines that the demand is invalid, any amount withheld pending the **City**'s review of such demand shall be paid to the **Contractor**; provided, however, no lien has been filed. In the event a claim or an action has been filed, the terms and conditions set forth in Article 23 shall apply. In the event a lien has been filed, the parties will be governed by the provisions of the Lien Law of the State of New York.

20.5 The provisions of this Article 20 shall not prevent the **City** and the **Contractor** from resolving disputes in accordance with the **PPB** Rules, where applicable.

20.6 In the event the **City** determines that the beneficiary is entitled to payment pursuant to this Article 20, such determination and any defenses and counterclaims raised by the **Contractor** shall be taken into account in evaluating the **Contractor's** performance.

20.7 Nothing in this Article 20 shall relieve the **Contractor** of the obligation to pay the claims of all persons with valid and lawful claims against the **Contractor** relating to the **Work**.

20.8 The **Contractor** shall not require any performance, payment or other bonds of any **Subcontractor** if this **Contract** does not require such bonds of the **Contractor**.

20.9 The payment guarantee made pursuant to this Article 20 shall be construed in a manner consistent with Section 137 of the State Finance Law and shall afford to persons furnishing labor or materials to the **Contractor** or its **Subcontractors** in the prosecution of the **Work** under this **Contract** all of the rights and remedies afforded to such persons by such section, including but not limited to, the right

to commence an action against the **City** on the payment guarantee provided by this Article 20 within the one-year limitations period set forth in Section 137(4)(b).

ARTICLE 21. RETAINED PERCENTAGE

21.1 If this **Contract** requires one hundred (100%) percent performance and payment security, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, five (5%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.2 If this **Contract** does not require one hundred (100%) percent performance and payment security and if the price for which this **Contract** was awarded does not exceed one million ($1,000,000) dollars, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, five (5%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.3 If this **Contract** does not require one hundred (100%) percent performance and payment security and if the price for which this **Contract** was awarded exceeds one million ($1,000,000) dollars, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, up to ten (10%) percent of the value of **Work** certified for payment in each partial payment voucher. The percentage to be retained is set forth in Schedule A of the General Conditions.

ARTICLE 22. INSURANCE

22.1 Types of Insurance: The **Contractor** shall procure and maintain the following types of insurance if, and as indicated, in Schedule A of the General Conditions (with the minimum limits and special conditions specified in Schedule A). Such insurance shall be maintained from the date the **Contractor** is required to provide Proof of Insurance pursuant to Article 22.3.1 through the date of completion of all required **Work** (including punch list work as certified in writing by the **Resident Engineer**), except for insurance required pursuant to Article 22.1.4, which may terminate upon **Substantial Completion** of the **Contract**. All insurance shall meet the requirements set forth in this Article 22. Wherever this Article requires that insurance coverage be "at least as broad" as a specified form (including all ISO forms), there is no obligation that the form itself be used, provided that the **Contractor** can demonstrate that the alternative form or endorsement contained in its policy provides coverage at least as broad as the specified form.

22.1.1 Commercial General Liability Insurance: The **Contractor** shall provide Commercial General Liability Insurance covering claims for property damage and/or bodily injury, including death, which may arise from any of the operations under this **Contract**. Coverage under this insurance shall be at least as broad as that provided by the latest edition of Insurance Services Office ("ISO") Form CG 0001. Such insurance shall be "occurrence" based rather than "claims-made" and include, without limitation, the following types of coverage: premises operations; products and completed operations; contractual liability (including the tort liability of another assumed in a contract); broad form property damage; independent contractors; explosion, collapse and underground (XCU); construction means and methods; and incidental malpractice. Such insurance shall contain a "per project" aggregate limit, as specified in Schedule A, that applies separately to operations under this **Contract**.

22.1.1(a) Such Commercial General Liability Insurance shall name the **City** as an Additional Insured. Coverage for the City shall specifically include the **City's** officials and employees, be at least as broad as the latest edition of ISO Form CG 20 10 and provide completed operations coverage at least as broad as the latest edition of ISO Form CG 20 37.

22.1.1(b) Such Commercial General Liability Insurance shall name all other entities designated as additional insureds in Schedule A but only for claims arising from the **Contractor's** operations under this **Contract**, with coverage at least as broad as the latest edition of ISO Form CG 20 26.

22.1.1(c) If the **Work** requires a permit from the Department of Buildings pursuant to 1 RCNY Section 101-08, at http://www.nyc.gov/html/dob/downloads/rules/1_RCNY_101-08.pdf, the **Contractor** shall provide Commercial General Liability Insurance with limits of at least those required by 1 RCNY section 101-08. If the **Work** does not require such a permit, the minimum limits shall be those provided for in Schedule A.

22.1.1(d) If any of the **Work** includes repair of a waterborne vessel owned by or to be delivered to the **City**, such Commercial General Liability shall include, or be endorsed to include, Ship Repairer's Legal Liability Coverage to protect against, without limitation, liability arising from navigation of such vessels prior to delivery to and acceptance by the **City**.

22.1.2 Workers' Compensation Insurance, Employers' Liability Insurance, and Disability Benefits Insurance: The **Contractor** shall provide, and shall cause its **Subcontractors** to provide, Workers Compensation Insurance, Employers' Liability Insurance, and Disability Benefits Insurance in accordance with the **Laws** of the State of New York on behalf of all employees providing services under this **Contract** (except for those employees, if any, for which the **Laws** require insurance only pursuant to Article 22.1.3).

22.1.3 United States Longshoremen's and Harbor Workers Act and/or Jones Act Insurance: If specified in Schedule A of the General Conditions or if required by **Law**, the **Contractor** shall provide insurance in accordance with the United States Longshoremen's and Harbor Workers Act and/or the Jones Act, on behalf of all qualifying employees providing services under this **Contract**.

22.1.4 Builders Risk Insurance: If specified in Schedule A of the General Conditions, the **Contractor** shall provide Builders Risk Insurance on a completed value form for the total value of the **Work** through **Substantial Completion** of the **Work** in its entirety. Such insurance shall be provided on an All Risk basis and include coverage, without limitation, for windstorm (including named windstorm), storm surge, flood and earth movement. Unless waived by the **Commissioner**, it shall include coverage for ordinance and law, demolition and increased costs of construction, debris removal, pollutant clean up and removal, and expediting costs. Such insurance shall cover, without limitation, (a) all buildings and/or structures involved in the **Work**, as well as temporary structures at the **Site**, and (b) any property that is intended to become a permanent part of such building or structure, whether such property is on the **Site**, in transit or in temporary storage. Policies shall name the **Contractor** as Named Insured and list the **City** as both an Additional Insured and a Loss Payee as its interest may appear.

22.1.4(a) Policies of such insurance shall specify that, in the event a loss occurs at an occupied facility, occupancy of such facility is permitted without the consent of the issuing insurance company.

22.1.4(b) Such insurance may be provided through an Installation Floater, at the **Contractor's** option, if it otherwise conforms with the requirements of this Article 22.1.4.

22.1.5 Commercial Automobile Liability Insurance: The **Contractor** shall provide Commercial Automobile Liability Insurance for liability arising out of ownership, maintenance or use of any owned (if any), non-owned and hired vehicles to be used in connection with this **Contract**. Coverage shall be at least as broad as the latest edition of ISO Form CA0001. If vehicles are used for transporting hazardous materials, the Automobile Liability Insurance shall be endorsed to provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90.

22.1.6 Contractors Pollution Liability Insurance: If specified in Schedule A of the General Conditions, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work** to maintain, Contractors Pollution Liability Insurance covering bodily injury and property damage. Such insurance shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants (including asbestos), including any loss, cost or expense incurred as a result of any cleanup of pollutants (including asbestos) or in the investigation, settlement or defense of any claim, action, or proceedings arising from the operations under this **Contract**. Such insurance shall be in the **Contractor's** name and list the **City** as an Additional Insured and any other entity specified in Schedule A. Coverage shall include, without limitation, (a) loss of use of damaged property or of property that has not been physically injured, (b) transportation, and (c) non-owned disposal sites.

22.1.6(a) Coverage for the **City** as Additional Insured shall specifically include the **City's** officials and employees and be at least as broad as provided to the **Contractor** for this **Project**.

22.1.6(b) If such insurance is written on a claims-made policy, such policy shall have a retroactive date on or before the effective date of this **Contract**, and continuous coverage shall be maintained, or an extended discovery period exercised, for a period of not less than three (3) years from the time the **Work** under this **Contract** is completed.

22.1.7 Marine Insurance:

22.1.7(a) Marine Protection and Indemnity Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such Work to maintain, Marine Protection and Indemnity Insurance with coverage at least as broad as Form SP-23. The insurance shall provide coverage for the **Contractor** or **Subcontractor** (whichever is doing this **Work**) and for the **City** (together with its officials and employees) and any other entity specified in Schedule A as an Additional Insured for bodily injury and property damage arising from marine operations under this **Contract**. Coverage shall include, without limitation, injury or death of crew members (if not fully provided through other insurance), removal of wreck, damage to piers, wharves and other fixed or floating objects and loss of or damage to any other vessel or craft, or to property on such other vessel or craft.

22.1.7(b) Hull and Machinery Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work** to maintain, Hull and Machinery Insurance with coverage for the **Contractor** or **Subcontractor** (whichever is doing this Work) and for the **City** (together with its officials and employees) as Additional Insured at least as broad as the latest edition of American Institute Tug Form for all tugs used under this **Contract** and Collision Liability at least as broad as the latest edition of American Institute Hull Clauses.

22.1.7(c) Marine Pollution Liability Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such Work to maintain, Marine Pollution Liability Insurance covering itself (or the Subcontractor doing such Work) as Named Insured and the **City** (together with its officials and employees) and any other entity specified in Schedule A as an Additional Insured. Coverage shall be at least as broad as that provided by the latest edition of Water Quality Insurance Syndicate Form and include, without limitation, liability arising from the discharge or substantial threat of a discharge of oil, or from the release or threatened release of a hazardous substance including injury to, or economic losses resulting from, the destruction of or damage to real property, personal property or natural resources.

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

22.2 General Requirements for Insurance Coverage and Policies:

22.2.1 All required insurance policies shall be maintained with companies that may lawfully issue the required policy and have an A.M. Best rating of at least A-/VII or a Standard and Poor's rating of at least A, unless prior written approval is obtained from the **City** Corporation Counsel.

22.2.2 The **Contractor** shall be solely responsible for the payment of all premiums for all required policies and all deductibles and self-insured retentions to which such policies are subject, whether or not the **City** is an insured under the policy.

22.2.3 In his/her sole discretion, the **Commissioner** may, subject to the approval of the **Comptroller** and the **City** Corporation Counsel, accept Letters of Credit and/or custodial accounts in lieu of required insurance.

22.2.4 The **City's** limits of coverage for all types of insurance required pursuant to Schedule A of the General Conditions shall be the greater of (i) the minimum limits set forth in Schedule A or (ii) the limits provided to the **Contractor** as Named Insured under all primary, excess, and umbrella policies of that type of coverage.

22.2.5 The **Contractor** may satisfy its insurance obligations under this Article 22 through primary policies or a combination of primary and excess/umbrella policies, so long as all policies provide the scope of coverage required herein.

22.2.6 Policies of insurance provided pursuant to this Article 22 shall be primary and non-contributing to any insurance or self-insurance maintained by the **City**.

22.3 Proof of Insurance:

22.3.1 For all types of insurance required by Article 22.1 and Schedule A, except for insurance required by Articles 22.1.4 and 22.1.7, the **Contractor** shall file proof of insurance in accordance with this Article 22.3 within ten (10) **Days** of award. For insurance provided pursuant to Articles 22.1.4 and 22.1.7, proof shall be filed by a date specified by the **Commissioner** or ten (10) **Days** prior to the commencement of the portion of the **Work** covered by such policy, whichever is earlier.

22.3.2 For Workers' Compensation Insurance provided pursuant to Article 22.1.2, the **Contractor** shall submit one of the following forms: C-105.2 Certificate of Workers' Compensation Insurance; U-26.3 - State Insurance Fund Certificate of Workers' Compensation Insurance; Request for WC/DB Exemption (Form CE-200); equivalent or successor forms used by the New York State Workers' Compensation Board; or other proof of insurance in a form acceptable to the **Commissioner**. For Disability Benefits Insurance provided pursuant to Article 22.1.2, the Contractor shall submit DB-120.1 - Certificate Of Insurance Coverage Under The NYS Disability Benefits Law, Request for WC/DB Exemption (Form CE-200); equivalent or successor forms used by the New York State Workers' Compensation Board; or other proof of insurance in a form acceptable to the **Commissioner**. ACORD forms are not acceptable.

22.3.3 For policies provided pursuant to all of Article 22.1 other than Article 22.1.2, the **Contractor** shall submit one or more Certificates of Insurance on forms acceptable to the **Commissioner**. All such Certificates of Insurance shall certify (a) the issuance and effectiveness of such policies of insurance, each with the specified minimum limits (b) for insurance secured pursuant to Article 22.1.1 that the **City** and any other entity specified in Schedule A is an Additional Insured with coverage at least as broad as the most recent edition of ISO Forms CG 20 10, CG 20 37, and CG 20 26, as applicable; (c) in the event insurance is required pursuant to Article 22.1.6 and/or Article 22.1.7, that the City is an Additional Insured thereunder; (d) the company code issued to the insurance company by the National Association of Insurance Commissioners (the NAIC number); and (e) the number assigned to the **Contract** by the **City**. All such Certificates of Insurance shall be accompanied by either a duly executed "Certification by Broker" in the form contained in Part III of Schedule A or copies of all policies referenced in such Certificate of Insurance as certified by an authorized representative of the issuing insurance carrier. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

22.3.4 Documentation confirming renewals of insurance shall be submitted to the **Commissioner** prior to the expiration date of coverage of policies required under this **Contract**. Such proofs of insurance shall comply with the requirements of Articles 22.3.2 and 22.3.3.

22.3.5 The **Contractor** shall be obligated to provide the **City** with a copy of any policy of insurance provided pursuant to this Article 22 upon the demand for such policy by the **Commissioner** or the **City** Corporation Counsel.

22.4 Operations of the **Contractor**:

22.4.1 The **Contractor** shall not commence the **Work** unless and until all required certificates have been submitted to and accepted by the **Commissioner**. Acceptance by the **Commissioner** of a certificate does not excuse the **Contractor** from securing insurance

consistent with all provisions of this Article 22 or of any liability arising from its failure to do so.

22.4.2 The **Contractor** shall be responsible for providing continuous insurance coverage in the manner, form, and limits required by this **Contract** and shall be authorized to perform **Work** only during the effective period of all required coverage.

22.4.3 In the event that any of the required insurance policies lapse, are revoked, suspended or otherwise terminated, for whatever cause, the **Contractor** shall immediately stop all **Work**, and shall not recommence **Work** until authorized in writing to do so by the **Commissioner**. Upon quitting the **Site**, except as otherwise directed by the **Commissioner**, the **Contractor** shall leave all plant, materials, equipment, tools, and supplies on the **Site**. **Contract** time shall continue to run during such periods and no extensions of time will be granted. The **Commissioner** may also declare the **Contractor** in default for failure to maintain required insurance.

22.4.4 In the event the **Contractor** receives notice, from an insurance company or other person, that any insurance policy required under this Article 22 shall be cancelled or terminated (or has been cancelled or terminated) for any reason, the **Contractor** shall immediately forward a copy of such notice to both the **Commissioner** and the New York City Comptroller, attn: Office of Contract Administration, Municipal Building, One Centre Street, room 1005, New York, New York 10007. Notwithstanding the foregoing, the **Contractor** shall ensure that there is no interruption in any of the insurance coverage required under this Article 22.

22.4.5 Where notice of loss, damage, occurrence, accident, claim or suit is required under an insurance policy maintained in accordance with this Article 22, the **Contractor** shall notify in writing all insurance carriers that issued potentially responsive policies of any such event relating to any operations under this **Contract** (including notice to Commercial General Liability insurance carriers for events relating to the **Contractor**'s own employees) no later than 20 days after such event. For any policy where the **City** is an Additional Insured, such notice shall expressly specify that "this notice is being given on behalf of the City of New York as Insured as well as the Named Insured." Such notice shall also contain the following information: the number of the insurance policy, the name of the named insured, the date and location of the damage, occurrence, or accident, and the identity of the persons or things injured, damaged or lost. The **Contractor** shall simultaneously send a copy of such notice to the City of New York c/o Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, New York 10007.

22.4.6 In the event of any loss, accident, claim, action, or other event that does or can give rise to a claim under any insurance policy required under this Article 22, the **Contractor** shall at all times fully cooperate with the **City** with regard to such potential or actual claim.

22.5 **Subcontractor** Insurance: In the event the **Contractor** requires any **Subcontractor** to procure insurance with regard to any operations under this **Contract** and requires such **Subcontractor** to name the **Contractor** as an **Additional Insured** thereunder, the **Contractor** shall ensure that the **Subcontractor** name the **City**, including its officials and employees, as an Additional Insured with coverage at least as broad as the most recent edition of ISO Form CG 20 26.

22.6 Wherever reference is made in Article 7 or this Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth in Schedule A of the General Conditions. In the event no address is set forth in Schedule A, such documents are to be sent to the **Commissioner's** address as provided elsewhere in this **Contract**.

22.7 Apart from damages or losses covered by insurance provided pursuant to Articles 22.1.2, 22.1.3, or 22.1.5, the **Contractor** waives all rights against the **City**, including its officials and employees, for any damages or losses that are covered under any insurance required under this Article 22 (whether or not such insurance is actually procured or claims are paid thereunder) or any other insurance applicable to the operations of the **Contractor** and/or its employees, agents, or **Subcontractors**.

22.8 In the event the **Contractor** utilizes a self-insurance program to satisfy any of the requirements of this Article 22, the **Contractor** shall ensure that any such self-insurance program provides the **City** with all rights that would be provided by traditional insurance under this Article 22, including but not limited to the defense and indemnification obligations that insurers are required to undertake in liability policies.

22.9 Materiality/Non-Waiver: The **Contractor's** failure to secure policies in complete conformity with this Article 22, or to give an insurance company timely notice of any sort required in this **Contract** or to do anything else required by this Article 22 shall constitute a material breach of this **Contract**. Such breach shall not be waived or otherwise excused by any action or inaction by the **City** at any time.

22.10 Pursuant to General Municipal Law Section 108, this **Contract** shall be void and of no effect unless **Contractor** maintains Workers' Compensation Insurance for the term of this **Contract** to the extent required and in compliance with the New York State Workers' Compensation Law.

22.11 Other Remedies: Insurance coverage provided pursuant to this Article 22 or otherwise shall not relieve the **Contractor** of any liability under this **Contract,** nor shall it preclude the **City** from exercising any rights or taking such other actions available to it under any other provisions of this **Contract** or **Law**.

ARTICLE 23. MONEY RETAINED AGAINST CLAIMS

23.1 If any claim shall be made by any person or entity (including **Other Contractors** with the **City** on this **Project**) against the **City** or against the **Contractor** and the **City** for any of the following:

(a) An alleged loss, damage, injury, theft or vandalism of any of the kinds referred to in Articles 7 and 12, plus the reasonable costs of defending the **City**, which in the opinion of the **Comptroller** may not be paid by an insurance company (for any reason whatsoever); or

(b) An infringement of copyrights, patents or use of patented articles, tools, etc., as referred to in Article 57; or

(c) Damage claimed to have been caused directly or indirectly by the failure of the **Contractor** to perform the **Work** in strict accordance with this **Contract,**

the amount of such claim, or so much thereof as the **Comptroller** may deem necessary, may be withheld by the **Comptroller**, as security against such claim, from any money due hereunder. The **Comptroller**, in his/her discretion, may permit the **Contractor** to substitute other satisfactory security in lieu of the monies so withheld.

23.2 If an action on such claim is timely commenced and the liability of the **City**, or the **Contractor**, or both, shall have been established therein by a final judgment of a court of competent jurisdiction, or if such claim shall have been admitted by the **Contractor** to be valid, the **Comptroller**

shall pay such judgment or admitted claim out of the monies retained by the **Comptroller** under the provisions of this Article 23, and return the balance, if any, without interest, to the **Contractor**.

ARTICLE 24. MAINTENANCE AND GUARANTY

24.1 The **Contractor** shall promptly repair, replace, restore or rebuild, as the **Commissioner** may determine, any finished **Work** in which defects of materials or workmanship may appear or to which damage may occur because of such defects, during the one (1) year period subsequent to the date of **Substantial Completion** (or use and occupancy in accordance with Article 16), except where other periods of maintenance and guaranty are provided for in Schedule A.

24.2 As security for the faithful performance of its obligations hereunder, the **Contractor**, upon filing its requisition for payment on **Substantial Completion**, shall deposit with the **Commissioner** a sum equal to one (1%) percent of the price (or the amount fixed in Schedule A of the General Conditions) in cash or certified check upon a state or national bank and trust company or a check of such bank and trust company signed by a duly authorized officer thereof and drawn to the order of the **Comptroller**, or obligations of the **City**, which the **Comptroller** may approve as of equal value with the sum so required.

24.3 In lieu of the above, the **Contractor** may make such security payment to the **City** by authorizing the **Commissioner** in writing to deduct the amount from the **Substantial Completion** payment which shall be deemed the deposit required above.

24.4 If the **Contractor** has faithfully performed all of its obligations hereunder the **Commissioner** shall so certify to the **Comptroller** within five (5) **Days** after the expiration of one (1) year from the date of **Substantial Completion** and acceptance of the **Work** or within thirty (30) **Days** after the expiration of the guarantee period fixed in the **Specifications**. The security payment shall be repaid to the **Contractor** without interest within thirty (30) **Days** after certification by the **Commissioner** to the **Comptroller** that the **Contractor** has faithfully performed all of its obligations hereunder.

24.5 Notice by the **Commissioner** to the **Contractor** to repair, replace, rebuild or restore such defective or damaged **Work** shall be timely, pursuant to this article, if given not later than ten (10) **Days** subsequent to the expiration of the one (1) year period or other periods provided for herein.

24.6 If the **Contractor** shall fail to repair, replace, rebuild or restore such defective or damaged **Work** promptly after receiving such notice, the **Commissioner** shall have the right to have the **Work** done by others in the same manner as provided for in the completion of a defaulted **Contract**, under Article 51.

24.7 If the security payment so deposited is insufficient to cover the cost of such **Work**, the **Contractor** shall be liable to pay such deficiency on demand by the **Commissioner**.

24.8 The **Engineer's** certificate setting forth the fair and reasonable cost of repairing, replacing, rebuilding or restoring any damaged or defective **Work** when performed by one other than the **Contractor**, shall be binding and conclusive upon the **Contractor** as to the amount thereof.

24.9 The **Contractor** shall obtain all manufacturers' warranties and guaranties of all equipment and materials required by this **Contract** in the name of the **City** and shall deliver same to the **Commissioner**. All of the **City's** rights and title and interest in and to said manufacturers' warranties and guaranties may be assigned by the **City** to any subsequent purchasers of such equipment and materials or lessees of the premises into which the equipment and materials have been installed.

CHAPTER VI
CHANGES, EXTRA WORK, AND DOCUMENTATION OF CLAIM

ARTICLE 25. CHANGES

25.1 Changes may be made to this **Contract** only as duly authorized in writing by the **Commissioner** in accordance with the **Law** and this **Contract**. All such changes, modifications, and amendments will become a part of the **Contract**. **Work** so ordered shall be performed by the **Contractor**.

25.2 **Contract** changes will be made only for **Work** necessary to complete the **Work** included in the original scope of the **Contract** and/or for non-material changes to the scope of the **Contract**. Changes are not permitted for any material alteration in the scope of **Work** in the **Contract**.

25.3 The **Contractor** shall be entitled to a price adjustment for **Extra Work** performed pursuant to a written change order. Adjustments to price shall be computed in one or more of the following ways:

25.3.1 By applicable unit prices specified in the **Contract**; and/or

25.3.2 By agreement of a fixed price; and/or

25.3.3 By time and material records; and/or

25.3.4 In any other manner approved by the **CCPO**.

25.4 All payments for change orders are subject to pre-audit by the **Engineering Audit Officer** and may be post-audited by the **Comptroller** and/or the **Agency**.

ARTICLE 26. METHODS OF PAYMENT FOR OVERRUNS AND EXTRA WORK

26.1 Overrun of Unit Price Item: An overrun is any quantity of a unit price item which the **Contractor** is directed to provide which is in excess of one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule.

26.1.1For 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**.

26.1.2If the actual quantity of any unit price item necessary to complete the **Work** will exceed one hundred twenty five (125%) percent of the estimated quantity for that item set forth in the bid schedule, the **City** reserves the right and the **Contractor** agrees to negotiate a new unit price for such item. In no event shall such negotiated new unit price exceed the unit bid price. If the **City** and **Contractor** cannot agree on a new unit price, then the **City** shall order the **Contractor** and the **Contractor** agrees to provide additional quantities of the

item on the basis of time and material records for the actual and reasonable cost as determined under Article 26.2, but in no event at a unit price exceeding the unit price bid.

26.2 **Extra Work:** For **Extra Work** where payment is by agreement on a fixed price in accordance with Article 25.3.2, the price to be paid for such **Extra Work** shall be based on the fair and reasonable estimated cost of the items set forth below. For **Extra Work** where payment is based on time and material records in accordance with Article 25.3.3, the price to be paid for such **Extra Work** shall be the actual and reasonable cost of the items set forth below, calculated in accordance with the formula specified therein, if any.

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

26.2.2 Necessary direct labor, including payroll taxes (subject to statutory wage caps) and supplemental benefits; plus

26.2.3 Sales and personal property taxes, if any, required to be paid on materials not incorporated into such **Extra Work**; plus

26.2.4 Reasonable rental value of **Contractor**-owned (or **Subcontractor**-owned, as applicable), necessary plant and equipment other than **Small Tools**, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per operating hour: (.035) x (HP rating) x (Fuel cost/gallon). Reasonable rental value is defined as the lower of either seventy-five percent of the monthly prorated rental rates established in "The AED Green Book, Rental Rates and Specifications for Construction Equipment" published by Equipment Watch (the "Green Book"), or seventy-five percent of the monthly prorated rental rates established in the "Rental Rate Blue Book for Construction Equipment" published by Equipment Watch (the "Blue Book") (the applicable Blue Book rate being for rental only without the addition of any operational costs listed in the Blue Book). The reasonable rental value is deemed to be inclusive of all operating costs except for fuel/energy consumption and equipment operator's wages/costs. For multiple shift utilization, reimbursement shall be calculated as follows: first shift shall be seventy-five (75%) percent of such rental rates; second shift shall be sixty (60%) percent of the first shift rate; and third shift shall be forty (40%) percent of the first shift rate. Equipment on standby shall be reimbursed at one-third (1/3) the prorated monthly rental rate. **Contractor**-owned (or **Subcontractor**-owned, as applicable) equipment includes equipment from rental companies affiliated with or controlled by the **Contractor** (or **Subcontractor**, as applicable), as determined by the **Commissioner**. In establishing cost reimbursement for non-operating **Contractor**-owned (or **Subcontractor**-owned, as applicable) equipment (scaffolding, sheeting systems, road plates, etc.), the **City** may restrict reimbursement to a purchase-salvage/life cycle basis if less than the computed rental costs; plus

26.2.5 Necessary installation and dismantling of such plant and equipment, including transportation to and from the **Site**, if any, provided that, in the case of non-**Contractor**-owned (or non-**Subcontractor**-owned, as applicable) equipment rented from a third party, the cost of installation and dismantling are not allowable if such costs are included in the rental rate; plus

26.2.6 Necessary fees charged by governmental entities; plus

26.2.7 Necessary construction-related service fees charged by non-governmental entities, such as landfill tipping fees; plus

26.2.8 Reasonable rental costs of non-**Contractor**-owned (or non-**Subcontractor**-owned, as applicable) necessary plant and equipment other than **Small Tools**, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per hour of operation: (.035) x (HP rating) x (Fuel cost/gallon). In lieu of renting, the **City** reserves the right to direct the purchase of non-operating equipment (scaffolding, sheeting systems, road plates, etc.), with payment on a purchase-salvage/life cycle basis, if less than the projected rental costs; plus

26.2.9 Workers' Compensation Insurance, and any insurance coverage expressly required by the **City** for the performance of the **Extra Work** which is different than the types of insurance required by Article 22 and Schedule A of the General Conditions. The cost of Workers' Compensation Insurance is subject to applicable payroll limitation caps and shall be based upon the carrier's Manual Rate for such insurance derived from the applicable class Loss Cost ("LC") and carrier's Lost Cost Multiplier ("LCM") approved by the New York State Department of Financial Services, and with the exception of experience rating, rate modifiers as promulgated by the New York Compensation Insurance Rating Board ("NYCIRB"); plus

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

26.2.11 Twelve percent (12%) percent of the total of items in Articles 26.2.1 through 26.2.5 as compensation for overhead, except that no percentage for overhead will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes. Overhead shall include without limitation, all costs and expenses in connection with administration, management superintendence, small tools, and insurance required by Schedule A of the General Conditions other than Workers' Compensation Insurance; plus

26.2.12 Ten (10%) percent of the total of items in Articles 26.2.1 through 26.2.5, plus the items in Article 26.2.11, as compensation for profit, except that no percentage for profit will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes; plus

26.2.13 Five (5%) percent of the total of items in Articles 26.2.6 through 26.2.10 as compensation for overhead and profit.

26.3 Where the **Extra Work** is performed in whole or in part by other than the **Contractor's** own forces pursuant to Article 26.2, the **Contractor** shall be paid, subject to pre-audit by the **Engineering Audit Officer**, the cost of such **Work** computed in accordance with Article 26.2 above, plus an additional allowance of five (5%) percent to cover the **Contractor's** overhead and profit.

26.4 Where a change is ordered, involving both **Extra Work** and omitted or reduced **Contract Work,** the **Contract** price shall be adjusted, subject to pre-audit by the **EAO**, in an amount based on the difference between the cost of such **Extra Work** and of the omitted or reduced **Work**.

26.5 Where the **Contractor** and the **Commissioner** can agree upon a fixed price for **Extra Work** in accordance with Article 25.3.2 or another method of payment for **Extra Work** in accordance with Article

25.3.4, or for **Extra Work** ordered in connection with omitted **Work**, such method, subject to pre-audit by the **EAO**, may, at the option of the **Commissioner**, be substituted for the cost plus a percentage method provided in Article 26.2; provided, however, that if the **Extra Work** is performed by a **Subcontractor**, the **Contractor** shall not be entitled to receive more than an additional allowance of five (5%) percent for overhead and profit over the cost of such **Subcontractor's Work** as computed in accordance with Article 26.2.

ARTICLE 27. RESOLUTION OF DISPUTES

27.1 All disputes between the **City** and the **Contractor** of the kind delineated in this Article 27.1 that arise under, or by virtue of, this **Contract** shall be finally resolved in accordance with the provisions of this Article 27 and the **PPB** Rules. This procedure for resolving all disputes of the kind delineated herein shall be the exclusive means of resolving any such disputes.

27.1.1 This Article 27 shall not apply to disputes concerning matters dealt with in other sections of the **PPB** Rules, or to disputes involving patents, copyrights, trademarks, or trade secrets (as interpreted by the courts of New York State) relating to proprietary rights in computer software.

27.1.2 This Article 27 shall apply only to disputes about the scope of **Work** delineated by the **Contract**, the interpretation of **Contract** documents, the amount to be paid for **Extra Work** or disputed work performed in connection with the **Contract**, the conformity of the **Contractor's Work** to the **Contract**, and the acceptability and quality of the **Contractor's Work**; such disputes arise when the **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner** makes a determination with which the **Contractor** disagrees.

27.2 All determinations required by this Article 27 shall be made in writing clearly stated, with a reasoned explanation for the determination based on the information and evidence presented to the party making the determination. Failure to make such determination within the time required by this Article 27 shall be deemed a non-determination without prejudice that will allow application to the next level.

27.3 During such time as any dispute is being presented, heard, and considered pursuant to this Article 27, the **Contract** terms shall remain in force and the **Contractor** shall continue to perform **Work** as directed by the **ACCO** or the **Engineer**. Failure of the **Contractor** to continue **Work** as directed shall constitute a waiver by the **Contractor** of its claim.

27.4 Presentation of Disputes to **Commissioner**.

Notice of Dispute and Agency Response. The **Contractor** shall present its dispute in writing ("Notice of Dispute") to the **Commissioner** within thirty (30) Days of receiving written notice of the determination or action that is the subject of the dispute. This notice requirement shall not be read to replace any other notice requirements contained in the **Contract**. The Notice of Dispute shall include all the facts, evidence, documents, or other basis upon which the **Contractor** relies in support of its position, as well as a detailed computation demonstrating how any amount of money claimed by the **Contractor** in the dispute was arrived at. Within thirty (30) Days after receipt of the detailed written submission comprising the complete Notice of Dispute, the **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner** shall submit to the **Commissioner** all materials he or she deems pertinent to the dispute. Following initial submissions to the **Commissioner**, either party may demand of the other the production of any document or other material the demanding party believes may be relevant to the dispute. The requested party shall produce all relevant materials that are not otherwise

protected by a legal privilege recognized by the courts of New York State. Any question of relevancy shall be determined by the **Commissioner** whose decision shall be final. Willful failure of the **Contractor** to produce any requested material whose relevancy the **Contractor** has not disputed, or whose relevancy has been affirmatively determined, shall constitute a waiver by the **Contractor** of its claim.

27.4.1 **Commissioner** Inquiry. The **Commissioner** shall examine the material and may, in his or her discretion, convene an informal conference with the **Contractor**, the **ACCO**, and the **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner** to resolve the issue by mutual consent prior to reaching a determination. The **Commissioner** may seek such technical or other expertise as he or she shall deem appropriate, including the use of neutral mediators, and require any such additional material from either or both parties as he or she deems fit. The **Commissioner's** ability to render, and the effect of, a decision hereunder shall not be impaired by any negotiations in connection with the dispute presented, whether or not the **Commissioner** participated therein. The **Commissioner** may or, at the request of any party to the dispute, shall compel the participation of any **Other Contractor** with a contract related to the **Work** of this **Contract**, and that **Contractor** shall be bound by the decision of the **Commissioner**. Any **Other Contractor** thus brought into the dispute resolution proceeding shall have the same rights and obligations under this Article 27 as the **Contractor** initiating the dispute.

27.4.2 **Commissioner** Determination. Within thirty (30) **Days** after the receipt of all materials and information, or such longer time as may be agreed to by the parties, the **Commissioner** shall make his or her determination and shall deliver or send a copy of such determination to the **Contractor**, the **ACCO,** and **Engineer**, **Resident Engineer**, **Engineering Audit Officer**, or other designee of the **Commissioner**, as applicable, together with a statement concerning how the decision may be appealed.

27.4.3 Finality of **Commissioner's** Decision. The **Commissioner's** decision shall be final and binding on all parties, unless presented to the Contract Dispute Resolution Board pursuant to this Article 27. The **City** may not take a petition to the Contract Dispute Resolution Board. However, should the **Contractor** take such a petition, the **City** may seek, and the Contract Dispute Resolution Board may render, a determination less favorable to the **Contractor** and more favorable to the **City** than the decision of the **Commissioner**.

27.5 Presentation of Dispute to the **Comptroller**. Before any dispute may be brought by the **Contractor** to the Contract Dispute Resolution Board, the **Contractor** must first present its claim to the **Comptroller** for his or her review, investigation, and possible adjustment.

27.5.1 Time, Form, and Content of Notice. Within thirty (30) **Days** of its receipt of a decision by the **Commissioner,** the **Contractor** shall submit to the **Comptroller** and to the **Commissioner** a Notice of Claim regarding its dispute with the **Agency**. The Notice of Claim shall consist of (i) a brief written statement of the substance of the dispute, the amount of money, if any, claimed and the reason(s) the **Contractor** contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written decision of the **Commissioner**; and (iii) a copy of all materials submitted by the **Contractor** to the **Agency**, including the Notice of Dispute. The **Contractor** may not present to the **Comptroller** any material not presented to the **Commissioner**, except at the request of the **Comptroller**.

27.5.2 Response. Within thirty (30) **Days** of receipt of the Notice of Claim, the **Agency** shall make available to the **Comptroller** a copy of all material submitted by the **Agency** to the **Commissioner** in connection with the dispute. The **Agency** may not present to the

Comptroller any material not presented to the **Commissioner** except at the request of the **Comptroller**.

27.5.3 **Comptroller** Investigation. The **Comptroller** may investigate the claim in dispute and, in the course of such investigation, may exercise all powers provided in Sections 7-201 and 7-203 of the Administrative Code. In addition, the **Comptroller** may demand of either party, and such party shall provide, whatever additional material the **Comptroller** deems pertinent to the claim, including original business records of the **Contractor**. Willful failure of the **Contractor** to produce within fifteen (15) **Days** any material requested by the **Comptroller** shall constitute a waiver by the **Contractor** of its claim. The **Comptroller** may also schedule an informal conference to be attended by the **Contractor, Agency** representatives, and any other personnel desired by the **Comptroller**.

27.5.4 Opportunity of **Comptroller** to Compromise or Adjust Claim. The **Comptroller** shall have forty-five (45) **Days** from his or her receipt of all materials referred to in Article 27.5.3 to investigate the disputed claim. The period for investigation and compromise may be further extended by agreement between the **Contractor** and the **Comptroller**, to a maximum of ninety (90) **Days** from the **Comptroller's** receipt of all materials. The **Contractor** may not present its petition to the Contract Dispute Resolution Board until the period for investigation and compromise delineated in this Article 27.5.4 has expired. In compromising or adjusting any claim hereunder, the **Comptroller** may not revise or disregard the terms of the **Contract** between the parties.

27.6 Contract Dispute Resolution Board. There shall be a Contract Dispute Resolution Board composed of:

27.6.1 The chief administrative law judge of the Office of Administrative Trials and Hearings (OATH) or his/her designated OATH administrative law judge, who shall act as chairperson, and may adopt operational procedures and issue such orders consistent with this Article 27 as may be necessary in the execution of the Contract Dispute Resolution Board's functions, including, but not limited to, granting extensions of time to present or respond to submissions;

27.6.2 The **CCPO** or his/her designee; any designee shall have the requisite background to consider and resolve the merits of the dispute and shall not have participated personally and substantially in the particular matter that is the subject of the dispute or report to anyone who so participated; and

27.6.3 A person with appropriate expertise who is not an employee of the **City**. This person shall be selected by the presiding administrative law judge from a prequalified panel of individuals, established and administered by OATH with appropriate background to act as decision-makers in a dispute. Such individual may not have a contract or dispute with the **City** or be an officer or employee of any company or organization that does, or regularly represents persons, companies, or organizations having disputes with the **City**.

27.7 Petition to the Contract Dispute Resolution Board. In the event the claim has not been settled or adjusted by the **Comptroller** within the period provided in this Article 27, the **Contractor**, within thirty (30) **Days** thereafter, may petition the Contract Dispute Resolution Board to review the **Commissioner's** determination.

27.7.1 Form and Content of Petition by **Contractor**. The **Contractor** shall present its dispute to the Contract Dispute Resolution Board in the form of a petition, which shall

include (i) a brief written statement of the substance of the dispute, the amount of money, if any, claimed, and the reason(s) the **Contractor** contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written Decision of the **Commissioner,** (iii) copies of all materials submitted by the **Contractor** to the Agency; (iv) a copy of the written decision of the **Comptroller**, if any, and (v) copies of all correspondence with, or written material submitted by the **Contractor**, to the **Comptroller**. The **Contractor** shall concurrently submit four (4) complete sets of the Petition: one set to the **City** Corporation Counsel (Attn: Commercial and Real Estate Litigation Division) and three (3) sets to the Contract Dispute Resolution Board at OATH's offices with proof of service on the **City** Corporation Counsel. In addition, the **Contractor** shall submit a copy of the written statement of the substance of the dispute, cited in (i) above, to both the **Commissioner** and the **Comptroller**.

27.7.2 **Agency** Response. Within thirty (30) **Days** of its receipt of the Petition by the **City** Corporation Counsel, the **Agency** shall respond to the brief written statement of the **Contractor** and make available to the Contract Dispute Resolution Board all material it submitted to the **Commissioner** and **Comptroller**. Three (3) complete copies of the **Agency** response shall be provided to the Contract Dispute Resolution Board and one to the **Contractor**. Extensions of time for submittal of the **Agency** response shall be given as necessary upon a showing of good cause or, upon consent of the parties, for an initial period of up to thirty (30) Days.

27.7.3 Further Proceedings. The Contract Dispute Resolution Board shall permit the **Contractor** to present its case by submission of memoranda, briefs, and oral argument. The Contract Dispute Resolution Board shall also permit the **Agency** to present its case in response to the **Contractor** by submission of memoranda, briefs, and oral argument. If requested by the **City** Corporation Counsel, the **Comptroller** shall provide reasonable assistance in the preparation of the **Agency's** case. Neither the **Contractor** nor the **Agency** may support its case with any documentation or other material that was not considered by the **Comptroller**, unless requested by the Contract Dispute Resolution Board. The Contract Dispute Resolution Board, in its discretion, may seek such technical or other expert advice as it shall deem appropriate and may seek, on its own or upon application of a party, any such additional material from any party as it deems fit. The Contract Dispute Resolution Board, in its discretion, may combine more than one dispute between the parties for concurrent resolution.

27.7.4 Contract Dispute Resolution Board Determination. Within forty-five (45) **Days** of the conclusion of all written submissions and oral arguments, the Contract Dispute Resolution Board shall render a written decision resolving the dispute. In an unusually complex case, the Contract Dispute Resolution Board may render its decision in a longer period, not to exceed ninety (90) **Days**, and shall so advise the parties at the commencement of this period. The Contract Dispute Resolution Board's decision must be consistent with the terms of the **Contract**. Decisions of the Contract Dispute Resolution Board shall only resolve matters before the Contract Dispute Resolution Board and shall not have precedential effect with respect to matters not before the Contract Dispute Resolution Board.

27.7.5 Notification of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution Board shall send a copy of its decision to the **Contractor**, the **ACCO**, the Engineer, the **Comptroller**, the **City** Corporation Counsel, the CCPO, and the **PPB**. A decision in favor of the **Contractor** shall be subject to the prompt payment provisions of the **PPB** Rules. The Required Payment Date shall be thirty (30) Days after the date the parties are formally notified of the Contract Dispute Resolution Board's decision.

27.7.6 Finality of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution
Board's decision shall be final and binding on all parties. Any party may seek review of the Contract Dispute Resolution Board's decision solely in the form of a challenge, filed within four (4) months of the date of the Contract Dispute Resolution Board's decision, in a court of competent jurisdiction of the State of New York, County of New York pursuant to Article 78 of the Civil Practice Law and Rules. Such review by the court shall be limited to the question of whether or not the Contract Dispute Resolution Board's decision was made in violation of lawful procedure, was affected by an error of **Law**, or was arbitrary and capricious or an abuse of discretion. No evidence or information shall be introduced or relied upon in such proceeding that was not presented to the Contract Dispute Resolution Board in accordance with this Article 27.

27.8 Any termination, cancellation, or alleged breach of the **Contract** prior to or during the pendency of any proceedings pursuant to this Article 27 shall not affect or impair the ability of the **Commissioner** or Contract Dispute Resolution Board to make a binding and final decision pursuant to this Article 27.

ARTICLE 28. RECORD KEEPING FOR EXTRA OR DISPUTED WORK OR WORK ON A TIME & MATERIALS BASIS

28.1 While the **Contractor** or any of its **Subcontractors** is performing **Work** on a time and material basis or **Extra Work** on a time and material basis ordered by the **Commissioner** under Article 25, or where the **Contractor** believes that it or any of its **Subcontractors** is performing **Extra Work** but a final determination by **Agency** has not been made, or the **Contractor** or any of its **Subcontractors** is performing disputed **Work** (whether on or off the **Site**), or complying with a determination or order under protest in accordance with Articles 11, 27, and 30, in each such case the **Contractor** shall furnish the **Resident Engineer** daily with three (3) copies of written statements signed by the **Contractor's** representative at the **Site** showing:

28.1.1 The name, trade, and number of each worker employed on such **Work** or engaged in complying with such determination or order, the number of hours employed, and the character of the **Work** each is doing; and

28.1.2 The nature and quantity of any materials, plant and equipment furnished or used in connection with the performance of such **Work** or compliance with such determination or order, and from whom purchased or rented.

28.2 A copy of such statement will be countersigned by the **Resident Engineer**, noting thereon any items not agreed to or questioned, and will be returned to the **Contractor** within two (2) **Days** after submission.

28.3 The **Contractor** and its **Subcontractors**, when required by the **Commissioner**, or the **Comptroller**, shall also produce for inspection, at the office of the **Contractor** or **Subcontractor**, any and all of its books, bid documents, financial statements, vouchers, records, daily job diaries and reports, and cancelled checks, and any other documents relating to showing the nature and quantity of the labor, materials, plant and equipment actually used in the performance of such **Work**, or in complying with such determination or order, and the amounts expended therefor, and shall permit the **Commissioner** and the **Comptroller** to make such extracts therefrom, or copies thereof, as they or either of them may desire.

28.4 In connection with the examination provided for herein, the **Commissioner**, upon demand therefor, will produce for inspection by the **Contractor** such records as the **Agency** may have with

respect to such **Extra Work** or disputed **Work** performed under protest pursuant to order of the **Commissioner**, except those records and reports which may have been prepared for the purpose of determining the accuracy and validity of the **Contractor's** claim.

28.5 Failure to comply strictly with these requirements shall constitute a waiver of any claim for extra compensation or damages on account of the performance of such **Work** or compliance with such determination or order.

ARTICLE 29. OMITTED WORK

29.1 If any **Contract Work** in a lump sum **Contract**, or if any part of a lump sum item in a unit price, lump sum, or percentage-bid **Contract** is omitted by the **Commissioner** pursuant to Article 33, the **Contract** price, subject to audit by the EAO, shall be reduced by a pro rata portion of the lump sum bid amount based upon the percent of **Work** omitted subject to Article 29.4. For the purpose of determining the pro rata portion of the lump sum bid amount, the bid breakdown submitted in accordance with Article 41 shall be considered, but shall not be the determining factor.

29.2 If the whole of a lump sum item or units of any other item is so omitted by the **Commissioner** in a unit price, lump sum, or percentage-bid **Contract**, then no payment will be made therefor except as provided in Article 29.4.

29.3 For units that have been ordered but are only partially completed, the unit price shall be reduced by a pro rata portion of the unit price bid based upon the percentage of **Work** omitted subject to Article 29.4.

29.4 In the event the **Contractor**, with respect to any omitted **Work**, has purchased any non-cancelable material and/or equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated into the **Work**, the **Contractor** shall be paid for such material and/or equipment in accordance with Article 64.2.1(b); provided, however, such payment is contingent upon the **Contractor's** delivery of such material and/or equipment in acceptable condition to a location designated by the **City**.

29.5 The **Contractor** agrees to make no claim for damages or for loss of overhead and profit with regard to any omitted **Work**.

ARTICLE 30. NOTICE AND DOCUMENTATION OF COSTS AND DAMAGES; PRODUCTION OF FINANCIAL RECORDS

30.1 If the **Contractor** shall claim to be sustaining damages by reason of any act or omission of the **City** or its agents, it shall submit to the **Commissioner** within forty-five (45) **Days** from the time such damages are first incurred, and every thirty (30) **Days** thereafter for as long as such damages are incurred, verified statements of the details and the amounts of such damages, together with documentary evidence of such damages. The **Contractor** may submit any of the above statements within such additional time as may be granted by the **Commissioner** in writing upon written request therefor. Failure of the **Commissioner** to respond in writing to a written request for additional time within thirty (30) **Days** shall be deemed a denial of the request. On failure of the **Contractor** to strictly comply with the foregoing provisions, such claims shall be deemed waived and no right to recover on such claims shall exist. Damages that the **Contractor** may claim in any action or dispute resolution procedure arising under or by reason of this **Contract** shall not be different from or in excess of the statements and documentation made pursuant to this Article 30.

30.2 In addition to the foregoing statements, the **Contractor** shall, upon notice from the **Commissioner**, produce for examination at the **Contractor's** office, by the **Engineer**, **Architect** or **Project Manager**, all of its books of account, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, and cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**, and submit itself and persons in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.3 In addition to the statements required under Article 28 and this Article 30, the **Contractor** and/or its **Subcontractor** shall, within thirty (30) **Days** upon notice from the **Commissioner** or **Comptroller**, produce for examination at the **Contractor's** and/or **Subcontractor's** office, by a representative of either the **Commissioner** or **Comptroller**, all of its books of account, bid documents, financial statements, accountant workpapers, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, and cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**. Further, the **Contractor** and/or its **Subcontractor** shall submit any person in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.4 Unless the information and examination required under Article 30.3 is provided by the **Contractor** and/or its **Subcontractor** upon thirty (30) **Days'** notice from the **Commissioner** or **Comptroller**, or upon the **Commissioner's** or **Comptroller's** written authorization to extend the time to comply, the **City** shall be released from all claims arising under, relating to or by reason of this **Contract**, except for sums certified by the **Commissioner** to be due under the provisions of this **Contract**. It is further stipulated and agreed that no person has the power to waive any of the foregoing provisions and that in any action or dispute resolution procedure against the **City** to recover any sum in excess of the sums certified by the **Commissioner** to be due under or by reason of this **Contract**, the **Contractor** must allege in its complaint and prove, at trial or during such dispute resolution procedure, compliance with the provisions of this Article 30.

30.5 In addition, after the commencement of any action or dispute resolution procedure by the **Contractor** arising under or by reason of this **Contract**, the **City** shall have the right to require the **Contractor** to produce for examination under oath, up until the trial of the action or hearing before the Contract Dispute Resolution Board, the books and documents described in Article 30.3 and submit itself and all persons in its employ for examination under oath. If this Article 30 is not complied with as required, then the **Contractor** hereby consents to the dismissal of the action or dispute resolution procedure.

CHAPTER VII
POWERS OF THE RESIDENT ENGINEER, THE ENGINEER OR ARCHITECT AND THE COMMISSIONER

ARTICLE 31. THE RESIDENT ENGINEER

31.1 The **Resident Engineer** shall have the power to inspect, supervise, and control the performance of the **Work**, subject to review by the **Commissioner**. The **Resident Engineer** shall not, however, have the power to issue an **Extra Work** order, except as specifically designated in writing by the **Commissioner**.

ARTICLE 32. THE ENGINEER OR ARCHITECT OR PROJECT MANAGER

32.1 The **Engineer** or **Architect** or **Project Manager**, in addition to those matters elsewhere herein delegated to the **Engineer** and expressly made subject to his/her determination, direction or approval, shall have the power, subject to review by the **Commissioner**:

32.1.1 To determine the amount, quality, and location of the **Work** to be paid for hereunder; and

32.1.2 To determine all questions in relation to the **Work**, to interpret the **Contract Drawings**, **Specifications**, and **Addenda**, and to resolve all patent inconsistencies or ambiguities therein; and

32.1.3 To determine how the **Work** of this **Contract** shall be coordinated with **Work** of **Other Contractors** engaged simultaneously on this **Project**, including the power to suspend any part of the **Work**, but not the whole thereof; and

32.1.4 To make minor changes in the **Work** as he/she deems necessary, provided such changes do not result in a net change in the cost to the **City** or to the **Contractor** of the **Work** to be done under the **Contract**; and

32.1.5 To amplify the **Contract Drawings**, add explanatory information and furnish additional **Specifications** and drawings, consistent with this **Contract**.

32.2 The foregoing enumeration shall not imply any limitation upon the power of the **Engineer** or **Architect** or **Project Manager**, for it is the intent of this **Contract** that all of the **Work** shall generally be subject to his/her determination, direction, and approval, except where the determination, direction or approval of someone other than the **Engineer** or **Architect** or **Project Manager** is expressly called for herein.

32.3 The **Engineer** or **Architect** or **Project Manager** shall not, however, have the power to issue an **Extra Work** order, except as specifically designated in writing by the **Commissioner**.

ARTICLE 33. THE COMMISSIONER

33.1 The **Commissioner**, in addition to those matters elsewhere herein expressly made subject to his/her determination, direction or approval, shall have the power:

33.1.1 To review and make determinations on any and all questions in relation to this **Contract**
and its performance; and

33.1.2 To modify or change this **Contract** so as to require the performance of **Extra Work** (subject, however, to the limitations specified in Article 25) or the omission of **Contract Work**; and

33.1.3 To suspend the whole or any part of the **Work** whenever in his/her judgment such suspension is required:

33.1.3(a) In the interest of the **City** generally; or

33.1.3(b) To coordinate the **Work** of the various contractors engaged on this **Project** pursuant to the provisions of Article 12; or

33.1.3(c) To expedite the completion of the entire **Project** even though the completion of this particular **Contract** may thereby be delayed.

ARTICLE 34. NO ESTOPPEL

34.1 Neither the **City** nor any **Agency**, official, agent or employee thereof, shall be bound, precluded or estopped by any determination, decision, approval, order, letter, payment or certificate made or given under or in connection with this **Contract** by the **City**, the **Commissioner**, the **Engineer**, the **Resident Engineer**, or any other official, agent or employee of the **City**, either before or after the final completion and acceptance of the **Work** and payment therefor:

34.1.1 From showing the true and correct classification, amount, quality or character of the **Work** actually done; or that any such determination, decision, order, letter, payment or certificate was untrue, incorrect or improperly made in any particular, or that the **Work**, or any part thereof, does not in fact conform to the requirements of this **Contract**; and

34.1.2 From demanding and recovering from the **Contractor** any overpayment made to it, or such damages as the **City** may sustain by reason of the **Contractor's** failure to perform each and every part of its **Contract**.

CHAPTER VIII
LABOR PROVISIONS

ARTICLE 35. EMPLOYEES

35.1 The **Contractor** and its **Subcontractors** shall not employ on the **Work**:

35.1.1 Anyone who is not competent, faithful and skilled in the **Work** for which he/she shall be employed; and whenever the **Commissioner** shall inform the **Contractor**, in writing, that any employee is, in his/her opinion, incompetent, unfaithful or disobedient, that employee shall be discharged from the **Work** forthwith, and shall not again be employed upon it; or

35.1.2 Any labor, materials or means whose employment, or utilization during the course of this **Contract**, may tend to or in any way cause or result in strikes, work stoppages, delays, suspension of **Work** or similar troubles by workers employed by the **Contractor** or its **Subcontractors**, or by any of the trades working in or about the buildings and premises where **Work** is being performed under this **Contract**, or by **Other Contractors** or their **Subcontractors** pursuant to other contracts, or on any other building or premises owned or operated by the **City**, its **Agencies**, departments, boards or authorities. Any violation by the **Contractor** of this requirement may, upon certification of the **Commissioner**, be considered as proper and sufficient cause for declaring the **Contractor** to be in default, and for the **City** to take action against it as set forth in Chapter X of this **Contract**, or such other article of this **Contract** as the **Commissioner** may deem proper; or

35.1.3 In accordance with Section 220.3-e of the Labor Law of the State of New York (hereinafter "Labor Law"), the **Contractor** and its **Subcontractors** shall not employ on the **Work** any apprentice, unless he/she is a registered individual, under a bona fide program

registered with the New York State Department of Labor. The allowable ratio of apprentices to journey-level workers in any craft classification shall not be greater than the ratio permitted to the **Contractor** as to its work force on any job under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered as above, shall be paid the wage rate determined by the **Comptroller** of the **City** for the classification of **Work** actually performed. The **Contractor** or **Subcontractor** will be required to furnish written evidence of the registration of its program and apprentices as well as all the appropriate ratios and wage rates, for the area of the construction prior to using any apprentices on the **Contract Work**.

35.2 If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand ($250,000) dollars, all laborers, workers, and mechanics employed in the performance of the **Contract** on the public work site, either by the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the **Work** contemplated by the **Contract**, shall be certified prior to performing any **Work** as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration.

35.3 In accordance with Local Law Nos. 30-2012 and 33-2012, codified at sections 6-132 and 12-113 of the Administrative Code, respectively,

35.3.1 The **Contractor** shall not take an adverse personnel action with respect to an officer or employee in retaliation for such officer or employee making a report of information concerning conduct which such officer or employee knows or reasonably believes to involve corruption, criminal activity, conflict of interest, gross mismanagement or abuse of authority by any officer or employee relating to this **Contract** to (a) the Commissioner of the Department of Investigation, (b) a member of the New York City Council, the Public Advocate, or the **Comptroller**, or (c) the **CCPO**, **ACCO**, **Agency** head, or **Commissioner**.

35.3.2 If any of the **Contractor**'s officers or employees believes that he or she has been the subject of an adverse personnel action in violation of Article 35.3.1, he or she shall be entitled to bring a cause of action against the **Contractor** to recover all relief necessary to make him or her whole. Such relief may include but is not limited to: (a) an injunction to restrain continued retaliation, (b) reinstatement to the position such employee would have had but for the retaliation or to an equivalent position, (c) reinstatement of full fringe benefits and seniority rights, (d) payment of two times back pay, plus interest, and (e) compensation for any special damages sustained as a result of the retaliation, including litigation costs and reasonable attorney's fees.

35.3.3 The **Contractor** shall post a notice provided by the **City** in a prominent and accessible place on any site where work pursuant to the **Contract** is performed that contains information about:

35.3.3(a) how its employees can report to the New York City Department of Investigation allegations of fraud, false claims, criminality or corruption arising out of or in connection with the **Contract**; and

35.3.3(b) the rights and remedies afforded to its employees under Administrative Code sections 7-805 (the New York City False Claims Act) and 12-113 (the Whistleblower Protection Expansion Act) for lawful acts taken in connection with the reporting of allegations of fraud, false claims, criminality or corruption in connection with the **Contract**.

35.3.4 For the purposes of this Article 35.3, "adverse personnel action" includes dismissal, demotion, suspension, disciplinary action, negative performance evaluation, any action resulting in loss of staff, office space, equipment or other benefit, failure to appoint, failure to promote, or any transfer or assignment or failure to transfer or assign against the wishes of the affected officer or employee.

35.3.5 This Article 35.3 is applicable to all of the **Contractor**'s **Subcontractors** having subcontracts with a value in excess of $100,000; accordingly, the **Contractor** shall include this rider in all subcontracts with a value a value in excess of $100,000.

35.4 Article 35.3 is not applicable to this **Contract** if it is valued at $100,000 or less. Articles 35.3.1, 35.3.2, 35.3.4, and 35.3.5 are not applicable to this **Contract** if it was solicited pursuant to a finding of an emergency.

ARTICLE 36. NO DISCRIMINATION

36.1 The **Contractor** specifically agrees, as required by Labor Law Section 220-e, as amended, that:

36.1.1 In the hiring of employees for the performance of **Work** under this **Contract** or any subcontract hereunder, neither the **Contractor**, **Subcontractor**, nor any person acting on behalf of such **Contractor** or **Subcontractor**, shall by reason of race, creed, color or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the **Work** to which the employment relates;

36.1.2 Neither the **Contractor**, **Subcontractor**, nor any person on its behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of **Work** under this **Contract** on account of race, creed, color or national origin;

36.1.3 There may be deducted from the amount payable to the **Contractor** by the **City** under this **Contract** a penalty of fifty ($50.00) dollars for each person for each **Day** during which such person was discriminated against or intimidated in violation of the provisions of this **Contract**; and

36.1.4 This **Contract** may be cancelled or terminated by the **City** and all moneys due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this Article 36.

36.1.5 This Article 36 covers all construction, alteration and repair of any public building or public work occurring in the State of New York and the manufacture, sale, and distribution of materials, equipment, and supplies to the extent that such operations are performed within the State of New York pursuant to this **Contract**.

36.2 The **Contractor** specifically agrees, as required by Section 6-108 of the Administrative Code, as amended, that:

36.2.1 It shall be unlawful for any person engaged in the construction, alteration or repair of buildings or engaged in the construction or repair of streets or highways pursuant to a **Contract** with the **City** or engaged in the manufacture, sale or distribution of materials, equipment or supplies pursuant to a **Contract** with the **City** to refuse to employ or to refuse to continue in any employment any person on account of the race, color or creed of such person.

36.2.2 It shall be unlawful for any person or any servant, agent or employee of any person, described in Article 36.1.2, to ask, indicate or transmit, orally or in writing, directly or indirectly, the race, color or creed or religious affiliation of any person employed or seeking employment from such person, firm or corporation.

36.2.3 Breach of the foregoing provisions shall be deemed a violation of a material provision of this **Contract**.

36.2.4 Any person, or the employee, manager or owner of or officer of such firm or corporation who shall violate any of the provisions of this Article 36.2 shall, upon conviction thereof, be punished by a fine of not more than one hundred ($100.00) dollars or by imprisonment for not more than thirty (30) **Days**, or both.

36.3 This **Contract** is subject to the requirements of Executive Order No. 50 (1980) ("E.O. 50"), as revised, and the rules and regulations promulgated thereunder. No contract will be awarded unless and until these requirements have been complied with in their entirety. By signing this **Contract**, the **Contractor** agrees that it:

36.3.1 Will not engage in any unlawful discrimination against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability, marital status or sexual orientation with respect to all employment decisions including, but not limited to, recruitment, hiring, upgrading, demotion, downgrading, transfer, training, rates of pay or other forms of compensation, layoff, termination, and all other terms and conditions of employment; and

36.3.2 Will not engage in any unlawful discrimination in the selection of **Subcontractors** on the basis of the owner's race, color, creed, national origin, sex, age, disability, marital status or sexual orientation; and

36.3.3 Will state in all solicitations or advertisements for employees placed by or on behalf of the **Contractor** that all qualified applicants will receive consideration for employment without unlawful discrimination based on race, creed, color, national origin, sex, age, citizens status, disability, marital status, sexual orientation, or that it is an equal employment opportunity employer; and

36.3.4 Will send to each labor organization or representative of workers with which it has a collective bargaining agreement or other contract or memorandum of understanding, written notification of its equal employment opportunity commitments under E.O. 50 and the rules and regulations promulgated thereunder; and

36.3.5 Will furnish, before the award of the **Contract**, all information and reports, including an employment report, that are required by E.O. 50, the rules and regulations promulgated thereunder, and orders of the **City** Department of Business Services, Division of Labor Services (**DLS**) and will permit access to its books, records, and accounts by the **DLS** for the purposes of investigation to ascertain compliance with such rules, regulations, and orders.

36.4 The **Contractor** understands that in the event of its noncompliance with the nondiscrimination clauses of this **Contract** or with any of such rules, regulations, or orders, such noncompliance shall constitute a material breach of this **Contract** and noncompliance with E.O. 50 and the rules and regulations promulgated thereunder. After a hearing held pursuant to the rules of the **DLS**, the Director of the **DLS** may direct the **Commissioner** to impose any or all of the following sanctions:

36.4.1 Disapproval of the **Contractor**; and/or

36.4.2 Suspension or termination of the **Contract**; and/or

36.4.3 Declaring the **Contractor** in default; and/or

36.4.4 In lieu of any of the foregoing sanctions, the Director of the **DLS** may impose an employment program.

In addition to any actions taken under this **Contract**, failure to comply with E.O. 50 and the rules and regulations promulgated thereunder, in one or more instances, may result in a **City Agency** declaring the **Contractor** to be non-responsible in future procurements. The **Contractor** further agrees that it will refrain from entering into any **Contract** or **Contract** modification subject to E.O. 50 and the rules and regulations promulgated thereunder with a **Subcontractor** who is not in compliance with the requirements of E.O. 50 and the rules and regulations promulgated thereunder.

36.5 The **Contractor** specifically agrees, as required by Section 6-123 of the Administrative Code, that:

36.5.1 The **Contractor** will not engage in any unlawful discriminatory practice in violation of Title 8 of the Administrative Code; and

36.5.2 Any failure to comply with this Article 36.5 may subject the **Contractor** to the remedies set forth in Section 6-123 of the Administrative Code, including, where appropriate, sanctions such as withholding of payment, imposition of an employment program, finding the **Contractor** to be in default, cancellation of the **Contract**, or any other sanction or remedy provided by **Law** or **Contract**.

ARTICLE 37. LABOR LAW REQUIREMENTS

37.1 The **Contractor** shall strictly comply with all applicable provisions of the Labor Law, as amended. Such compliance is a material term of this **Contract**.

37.2 The **Contractor** specifically agrees, as required by Labor Law Sections 220 and 220-d, as amended, that:

37.2.1 Hours of **Work**: No laborer, worker, or mechanic in the employ of the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the **Work** contemplated by this **Contract** shall be permitted or required to work more than eight (8) hours in any one (1) **Day**, or more than five (5) **Days** in any one (1) week, except as provided in the Labor Law and in cases of extraordinary emergency including fire, flood, or danger to life or property, or in the case of national emergency when so proclaimed by the President of the United States of America.

37.2.2 In situations in which there are not sufficient laborers, workers, and mechanics who may be employed to carry on expeditiously the **Work** contemplated by this **Contract** as a result of such restrictions upon the number of hours and **Days** of labor, and the immediate commencement or prosecution or completion without undue delay of the **Work** is necessary for the preservation of the **Site** and/or for the protection of the life and limb of the persons using the same, such laborers, workers, and mechanics shall be permitted or required to

work more than eight (8) hours in any one (1) **Day**; or five (5) **Days** in any one (1) week; provided, however, that upon application of any **Contractor**, the **Commissioner** shall have first certified to the Commissioner of Labor of the State of New York (hereinafter "Commissioner of Labor") that such public **Work** is of an important nature and that a delay in carrying it to completion would result in serious disadvantage to the public; and provided, further, that such Commissioner of Labor shall have determined that such an emergency does in fact exist as provided in Labor Law Section 220.2.

37.2.3 Failure of the **Commissioner** to make such a certification to the Commissioner of Labor shall not entitle the **Contractor** to damages for delay or for any cause whatsoever.

37.2.4 Prevailing Rate of Wages: The wages to be paid for a legal day's **Work** to laborers, workers, or mechanics employed upon the **Work** contemplated by this **Contract** or upon any materials to be used thereon shall not be less than the "prevailing rate of wage" as defined in Labor Law Section 220, and as fixed by the **Comptroller** in the attached Schedule of Wage Rates and in updated schedules thereof. The prevailing wage rates and supplemental benefits to be paid are those in effect at the time the **Work** is being performed.

37.2.5 Requests for interpretation or correction in the Information for Bidders includes all requests for clarification of the classification of trades to be employed in the performance of the **Work** under this **Contract**. In the event that a trade not listed in the **Contract** is in fact employed during the performance of this **Contract**, the **Contractor** shall be required to obtain from the **Agency** the prevailing wage rates and supplementary benefits for the trades used and to complete the performance of this **Contract** at the price at which the **Contract** was awarded.

37.2.6 Minimum Wages: Except for employees whose wage is required to be fixed pursuant to Labor Law Section 220, all persons employed by the **Contractor** and any **Subcontractor** in the manufacture or furnishing of the supplies, materials, or equipment, or the furnishing of work, labor, or services, used in the performance of this **Contract**, shall be paid, without subsequent deduction or rebate unless expressly authorized by **Law**, not less than the sum mandated by **Law**.

37.3 Working Conditions: No part of the **Work**, labor or services shall be performed or rendered by the **Contractor** in any plants, factories, buildings or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of this **Contract**. Compliance with the safety, sanitary, and factory inspection **Laws** of the state in which the **Work** is to be performed shall be prima facie evidence of compliance with this Article 37.3.

37.4 Prevailing Wage Enforcement: The **Contractor** agrees to pay for all costs incurred by the **City** in enforcing prevailing wage requirements, including the cost of any investigation conducted by or on behalf of the **Agency** or the **Comptroller,** where the **City** discovers a failure to comply with any of the requirements of this Article 37 by the **Contractor** or its **Subcontractor(s)**. The **Contractor** also agrees that, should it fail or refuse to pay for any such investigation, the **Agency** is hereby authorized to deduct from a **Contractor's** account an amount equal to the cost of such investigation.

37.4.1 The Labor Law Section 220 and Section 220-d, as amended, provide that this **Contract** shall be forfeited and no sum paid for any **Work** done hereunder on a second conviction for willfully paying less than:

37.4.1(a) The stipulated prevailing wage scale as provided in Labor Law section 220, as amended, or

37.4.1(b) The stipulated minimum hourly wage scale as provided in Labor Law section 220-d, as amended.

37.4.2 For any breach or violation of either working conditions (Article 37.3) or minimum wages (Article 37.2.6) provisions, the party responsible therefor shall be liable to the **City** for liquidated damages, which may be withheld from any amounts due on any contracts with the **City** of such party responsible, or may be recovered in actions brought by the **City** Corporation Counsel in the name of the **City**, in addition to damages for any other breach of this **Contract**, for a sum equal to the amount of any underpayment of wages due to any employee engaged in the performance of this **Contract**. In addition, the **Commissioner** shall have the right to cancel contracts and enter into other contracts for the completion of the original contract, with or without public letting, and the original **Contractor** shall be liable for any additional cost. All sums withheld or recovered as deductions, rebates, refunds, or underpayment of wages hereunder, shall be held in a special deposit account and shall be paid without interest, on order of the **Comptroller**, directly to the employees who have been paid less than minimum rates of pay as set forth herein and on whose account such sums were withheld or recovered, provided that no claims by employees for such payments shall be entertained unless made within two (2) years from the date of actual notice to the **Contractor** of the withholding or recovery of such sums by the **City**.

37.4.3 A determination by the **Comptroller** that a **Contractor** and/or its **Subcontractor** willfully violated Labor Law Section 220 will be forwarded to the **City's** five District Attorneys for review.

37.4.4 The **Contractor's** or **Subcontractor's** noncompliance with this Article 37.4 and Labor Law Section 220 may result in an unsatisfactory performance evaluation and the **Comptroller** may also find and determine that the **Contractor** or **Subcontractor** willfully violated the New York Labor **Law**.

37.4.4(a) An unsatisfactory performance evaluation for noncompliance with this Article 37.4 may result in a determination that the **Contractor** is a non-responsible bidder on subsequent procurements with the **City** and thus a rejection of a future award of a contract with the **City**, as well as any other sanctions provided for by **Law**.

37.4.4(b) Labor Law Section 220-b, as amended, provides that when two (2) final determinations have been rendered against a **Contractor** or **Subcontractor** within any consecutive six (6) year period determining that such **Contractor** or **Subcontractor** has willfully failed to pay the prevailing rate of wages or to provide supplements in accordance with the Labor Law and this Article 37.4, whether such failures were concurrent or consecutive and whether or not such final determinations concerning separate public works projects are rendered simultaneously, such **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public works contract with the **City** for a period of five (5) years from the second final determination. If the final determination involves the falsification of payroll records or the kickback of wages or supplements, the **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public works contract with the **City** for a period of five (5) years from the first final determination.

37.4.4(c) Labor Law Section 220, as amended, provides that the **Contractor** or **Subcontractor** found to have violated this Article 37.4 may be directed to make payment of wages or supplements including interest found to be due, and the **Contractor** or **Subcontractor** may be directed to make payment of a further sum as

a civil penalty in an amount not exceeding twenty-five (25%) percent of the total amount found to be due.

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

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

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

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

37.6.3 Individual Employee Information Notices: Distribute a notice to each worker, laborer or mechanic employed under this **Contract**, in a form provided by the **Agency**, that this **Project** is a public works project on which each worker, laborer or mechanic is entitled to receive the prevailing rate of wages and supplements for the occupation at which he or she is working. If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand ($250,000) dollars, such notice shall also include a statement that each worker, laborer or mechanic must be certified prior to performing any **Work** as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration. Such notice shall be distributed to each worker before he or she starts performing any **Work** of this **Contract** and with the first paycheck after July first of each year. "Worker, laborer or mechanic" includes employees of the **Contractor** and all **Subcontractors** and all employees of suppliers entering the **Site**. At the time of distribution, the **Contractor** shall have each worker, laborer or mechanic sign a statement, in a form provided by the **Agency**, certifying that the worker has received the notice required by this

Article 37.6.3, which signed statement shall be maintained with the payroll records required by this **Contract**; and

37.6.3(a) The **Contractor** and each **Subcontractor** shall notify each worker, laborer or mechanic employed under this **Contract** in writing of the prevailing rate of wages for their particular job classification. Such notification shall be given to every worker, laborer, and mechanic on their first pay stub and with every pay stub thereafter; and

37.6.4 **Site** Laminated Identification Badges: The **Contractor** shall provide laminated identification badges which include a photograph of the worker's, laborer's or mechanic's face and indicate the worker's, laborer's or mechanic's name, trade, employer's name, and employment starting date (month/day/year). Further, the **Contractor** shall require as a condition of employment on the **Site**, that each and every worker, laborer or mechanic wear the laminated identification badge at all times and that it may be seen by any representative of the **City**. The **Commissioner** may grant a written waiver from the requirement that the laminated identification badge include a photograph if the **Contractor** demonstrates that the identity of an individual wearing a laminated identification badge can be easily verified by another method; and

37.6.5 Language Other Than English Used On **Site**: Provide the **ACCO** notice when three (3) or more employees (worker and/or laborer and/or mechanic) on the **Site**, at any time, speak a language other than English. The **ACCO** will then provide the **Contractor** the notices described in Article 37.6.1 in that language or languages as may be required. The **Contractor** is responsible for all distributions under this Article 37; and

37.6.6 Provision of Records: The **Contractor** and **Subcontractor(s)** shall produce within five (5) **Days** on the **Site** of the **Work** and upon a written order of the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, or the **Comptroller**, such records as are required to be kept by this Article 37.6; and

37.6.7 The **Contractor** and **Subcontractor(s)** shall pay employees by check or direct deposit. If this **Contract** is for an amount greater than one million ($1,000,000) dollars, checks issued by the **Contractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be used if approved by the **Agency**). For any subcontract for an amount greater than seven hundred fifty thousand ($750,000) dollars, checks issued by a **Subcontractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be used if approved by the **Agency**); and

37.6.8 The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of Articles 37.6.1 through 37.6.7 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract.**

37.7 The **Contractor** and its **Subcontractors** shall keep such employment and payroll records as are required by Section 220 of the Labor Law. The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of this Article 37.7 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract.**

37.8 At the time the **Contractor** makes application for each partial payment and for final payment, the **Contractor** shall submit to the **Commissioner** a written payroll certification, in the form provided by this **Contract**, of compliance with the prevailing wage, minimum wage, and other provisions and stipulations required by Labor Law Section 220 and of compliance with the training requirements of

Labor Law Section 220-h set forth in Article 35.2. This certification of compliance shall be a condition precedent to payment and no payment shall be made to the **Contractor** unless and until each such certification shall have been submitted to and received by the **Commissioner**.

37.9 This **Contract** is executed by the **Contractor** with the express warranty and representation that the **Contractor** is not disqualified under the provisions of Section 220 of the Labor Law from the award of the **Contract**.

37.10 Any breach or violation of any of the foregoing shall be deemed a breach or violation of a material provision of this **Contract**, and grounds for cancellation thereof by the **City**.

ARTICLE 38. PAYROLL REPORTS

38.1 The **Contractor** and its **Subcontractor(s)** shall maintain on the **Site** during the performance of the **Work** the original payrolls or transcripts thereof which the **Contractor** and its **Subcontractor(s)** are required to maintain and shall submit such original payrolls or transcripts, subscribed and affirmed by it as true, within thirty (30) **Days** after issuance of its first payroll, and every thirty (30) **Days** thereafter, pursuant to Labor Law Section 220(3-a)(a)(iii). The **Contractor** and **Subcontractor(s)** shall submit such original payrolls or transcripts along with each and every payment requisition. If payment requisitions are not submitted at least once a month, the **Contractor** and its **Subcontractor(s)** shall submit original payrolls and transcripts both along with its payment requisitions and independently of its payment requisitions.

38.2 The **Contractor** shall maintain payrolls or transcripts thereof for six (6) years from the date of completion of the **Work** on this **Contract**. If such payrolls and transcripts are maintained outside of New York City after the completion of the **Work** and their production is required pursuant to this Article 38, the **Contractor** shall produce such records in New York City upon request by the City.

38.3 The **Contractor** and **Subcontractor(s)** shall comply with any written order, direction, or request made by the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, the **Agency Labor Law Investigator(s)**, or the **Comptroller**, to provide to the requesting party any of the following information and/or records within five (5) **Days** of such written order, direction, or request:

38.3.1 Such original payrolls or transcripts thereof subscribed and affirmed by it as true and the statements signed by each worker pursuant to this Chapter VIII; and/or

38.3.2 Attendance sheets for each **Day** on which any employee of the **Contractor** and/or any of the **Subcontractor(s)** performed **Work** on the **Site**, which attendance sheet shall be in a form acceptable to the **Agency** and shall provide information acceptable to the **Agency** to identify each such employee; and/or

38.3.3 Any other information to satisfy the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, the **Agency Labor Law Investigator(s)** or the **Comptroller**, that this Chapter VIII and the Labor Law, as to the hours of employment and prevailing rates of wages and/or supplemental benefits, are being observed.

38.4 The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of Articles 38.1 and/or 38.2 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract**.

ARTICLE 39. DUST HAZARDS

39.1 Should a harmful dust hazard be created in performing the **Work** of this **Contract**, for the elimination of which appliances or methods have been approved by the Board of Standards and Appeals of the City of New York, such appliances and methods shall be installed, maintained, and effectively operated during the continuance of such harmful dust hazard. Failure to comply with this provision after notice shall make this **Contract** voidable at the sole discretion of the **City**.

CHAPTER IX
PARTIAL AND FINAL PAYMENTS

ARTICLE 40. CONTRACT PRICE

40.1 The **City** shall pay, and the **Contractor** agrees to accept, in full consideration for the **Contractor's** performance of the **Work** subject to the terms and conditions hereof, the lump sum price or unit prices for which this **Contract** was awarded, plus the amount required to be paid for any **Extra Work** ordered by the **Commissioner** under Article 25, less credit for any **Work** omitted pursuant to Article 29.

ARTICLE 41. BID BREAKDOWN ON LUMP SUM

41.1 Within fifteen (15) **Days** after the commencement date specified in the **Notice to Proceed** or **Order to Work**, unless otherwise directed by the **Resident Engineer**, the **Contractor** shall submit to the **Resident Engineer** a breakdown of its bid price, or of lump sums bid for items of the **Contract**, showing the various operations to be performed under the **Contract**, as directed in the progress schedule required under Article 9, and the value of each of such operations, the total of such items to equal the lump sum price bid. Said breakdown must be approved in writing by the **Resident Engineer**.

41.2 No partial payment will be approved until the **Contractor** submits a bid breakdown that is acceptable to the **Resident Engineer**.

41.3 The **Contractor** shall also submit such other information relating to the bid breakdown as directed by the **Resident Engineer**. Thereafter, the breakdown may be used only for checking the **Contractor's** applications for partial payments hereunder, but shall not be binding upon the **City**, the **Commissioner**, or the **Engineer** for any purpose whatsoever.

ARTICLE 42. PARTIAL PAYMENTS

42.1 From time to time as the **Work** progresses satisfactorily, but not more often than once each calendar month (except where the **Commissioner** approves in writing the submission of invoices on a more frequent basis and for invoices relating to **Work** performed pursuant to a change order), the **Contractor** may submit to the **Engineer** a requisition for a partial payment in the prescribed form, which shall contain an estimate of the quantity and the fair value of the **Work** done during the payment period.

42.2 Partial payments may be made for materials, fixtures, and equipment in advance of their actual incorporation in the **Work**, as the **Commissioner** may approve, and upon the terms and conditions set forth in the General Conditions.

42.3 The **Contractor** shall also submit to the **Commissioner** in connection with every application for partial payment a verified statement in the form prescribed by the **Comptroller** setting forth the information required under Labor Law Section 220-a.

42.4 Within thirty (30) **Days** after receipt of a satisfactory payment application, and within sixty (60) **Days** after receipt of a satisfactory payment application in relation to **Work** performed pursuant to a change order, the **Engineer** will prepare and certify, and the **Commissioner** will approve, a voucher for a partial payment in the amount of such approved estimate, less any and all deductions authorized to be made by the **Commissioner** under the terms of this **Contract** or by **Law**.

ARTICLE 43. PROMPT PAYMENT

43.1 The Prompt Payment provisions of the **PPB** Rules in effect at the time of the bid will be applicable to payments made under this **Contract.** The provisions require the payment to the **Contractor** of interest on payments made after the required payment date, except as set forth in the **PPB** Rules.

43.2 The **Contractor** shall submit a proper invoice to receive payment, except where the **Contract** provides that the **Contractor** will be paid at predetermined intervals without having to submit an invoice for each scheduled payment.

43.3 Determination of interest due will be made in accordance with the **PPB** Rules.

43.4 If the **Contractor** is paid interest, the proportionate share(s) of that interest shall be forwarded by the **Contractor** to its **Subcontractor(s).**

43.5 The **Contractor** shall pay each **Subcontractor** or **Materialman** not later than seven (7) **Days** after receipt of payment out of amounts paid to the **Contractor** by the **City** for **Work** performed by the **Subcontractor** or **Materialman** under this **Contract.**

> 43.5.1 If **Contractor** fails to make any payment to any **Subcontractor** or **Materialman** within seven (7) **Days** after receipt of payment by the **City** pursuant to this Article 43.5, then the **Contractor** shall pay interest on amounts due to such **Subcontractor** or **Materialman** at the rate of interest in effect on the date such payment is made by the **Contractor** computed in accordance with Section 756-b (1)(b) of the New York General Business Law. Accrual of interest shall commence on the **Day** immediately following the expiration of the seventh **Day** following receipt of payment by the **Contractor** from the **City** and shall end on the date on which payment is made.

43.6 The **Contractor** shall include in each of its subcontracts a provision requiring each **Subcontractor** to make payment to each of its **Subcontractors** or **Materialmen** for **Work** performed under this **Contract** in the same manner and within the same time period set forth above.

ARTICLE 44. SUBSTANTIAL COMPLETION PAYMENT

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

> 44.1.1 A final verified statement of any pending Article 27 disputes in accordance with the **PPB** Rules and this **Contract** and any and all alleged claims against the **City**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30) setting forth with respect to each

such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the **Contractor** claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay.

44.1.1(a) With respect to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the **City** Corporation Counsel shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this Article 44.1.1(a) is intended to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor** upon acceptance of the **Substantial Completion** payment pursuant to this Article 44, will have waived any such claims.

44.1.2 A **Final Approved Punch List.**

44.1.3 Where required, a request for an extension of time to achieve **Substantial Completion** or final extension of time.

44.2 The **Commissioner** shall issue a voucher calling for payment of any part or all of the balance due for **Work** performed under the **Contract**, including monies retained under Article 21, less any and all deductions authorized to be made by the **Commissioner**, under this **Contract** or by **Law**, and less twice the amount the **Commissioner** considers necessary to ensure the completion of the balance of the **Work** by the **Contractor**. Such a payment shall be considered a partial and not a final payment. No **Substantial Completion** payment shall be made under this Article 44 where the **Contractor** failed to complete the **Work** within the time fixed for such completion in the Schedule A of the General Conditions, or within the time to which completion may have been extended, until an extension or extensions of time for the completion of **Work** have been acted upon pursuant to Article 13.

44.3 No further partial payments shall be made to the **Contractor** after **Substantial Completion**, except the **Substantial Completion** payment and payment pursuant to any **Contractor's** requisition that were properly filed with the **Commissioner** prior to the date of **Substantial Completion**; however, the **Commissioner** may grant a waiver for further partial payments after the date of **Substantial Completion** to permit payments for change order **Work** and/or release of retainage and deposits pursuant to Articles 21 and 24. Such waiver shall be in writing.

44.4 The **Contractor** acknowledges that nothing contained in this Article 44 is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 45. FINAL PAYMENT

45.1 After completion and **Final Acceptance** of the **Work**, the **Contractor** shall submit all required certificates and documents, together with a requisition for the balance claimed to be due under the **Contract**, less the amount authorized to be retained for maintenance under Article 24. Such submission shall be within 90 days of the date of the **Commissioner's** written determination of **Final Acceptance**, or within such additional time as may be granted by the **Commissioner** in writing. If the **Contractor** fails to submit all required certificates and documents within the time allowed, no payment of the balance claimed shall be made to the **Contractor** and the **Contractor** shall be deemed to have forfeited its right to

payment of any balance claimed. A verified statement similar to that required in connection with applications for partial payments shall also be submitted to the **Commissioner**.

45.2 Amended Verified Statement of Claims: The **Contractor** shall also submit with the final requisition any amendments to the final verified statement of any pending dispute resolution procedures in accordance with the **PPB** Rules and this **Contract** and any and all alleged claims against the **City**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30) that have occurred subsequent to **Substantial Completion**, setting forth with respect to each such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each such item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the **Contractor** claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay. With reference to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the **City** Corporation Counsel shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this Article 45.2, is intended to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor**, upon acceptance of the Final Payment pursuant to Article 46, will have waived any such claims.

45.3 Preparation of Final Voucher: Upon determining the balance due hereunder other than on account of claims, the **Engineer** will prepare and certify, for the Commissioner's approval, a voucher for final payment in that amount less any and all deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law**. In the case of a lump sum **Contract**, the **Commissioner** shall certify the voucher for final payment within thirty (30) **Days** from the date of completion and acceptance of the **Work**, provided all requests for extensions of time have been acted upon.

45.3.1 All prior certificates and vouchers upon which partial payments were made, being merely estimates made to enable the **Contractor** to prosecute the **Work** more advantageously, shall be subject to correction in the final voucher, and the certification of the **Engineer** thereon and the approval of the **Commissioner** thereof, shall be conditions precedent to the right of the **Contractor** to receive any money hereunder. Such final voucher shall be binding and conclusive upon the **Contractor**.

45.3.2 Payment pursuant to such final voucher, less any deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law**, shall constitute the final payment, and shall be made by the **Comptroller** within thirty (30) **Days** after the filing of such voucher in his/her office.

45.4 The **Contractor** acknowledges that nothing contained in this Article 45 is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 46. ACCEPTANCE OF FINAL PAYMENT

46.1 The acceptance by the **Contractor**, or by anyone claiming by or through it, of the final payment, whether such payment be made pursuant to any judgment of any court, or otherwise, shall constitute and operate as a release of the **City** from any and all claims of and liability to the **Contractor** for anything heretofore done or furnished for the **Contractor** relating to or arising out of this **Contract** and the **Work** done hereunder, and for any prior act, neglect or default on the part of the **City** or any of its officials, agents or employees, excepting only a claim against the **City** for the amounts deducted or retained in accordance with the terms and provisions of this **Contract** or by **Law**, and excepting any

claims, not otherwise waived, or any pending dispute resolution procedures which are contained in the verified statement filed with the **Contractor's** substantial and final requisitions pursuant to Articles 44 and 45.

46.2 The **Contractor** is warned that the execution by it of a release, in connection with the acceptance of the final payment, containing language purporting to reserve claims other than those herein specifically excepted from the operation of this Article 46, or those for amounts deducted by the **Commissioner** from the final requisition or from the final payment as certified by the **Engineer** and approved by the **Commissioner**, shall not be effective to reserve such claims, anything stated to the **Contractor** orally or in writing by any official, agent or employee of the **City** to the contrary notwithstanding.

46.3 Should the **Contractor** refuse to accept the final payment as tendered by the **Comptroller**, it shall constitute a waiver of any right to interest thereon.

46.4 The **Contractor**, however, shall not be barred by this Article 46 from commencing an action for breach of **Contract** to the extent permitted by **Law** and by the terms of the **Contract** for any claims that are contained in the verified statement filed with the **Contractor's** substantial and final requisitions pursuant to Articles 44 and 45 or that arose after submission of the final payment requisition, provided that a detailed and verified statement of claim is served upon the contracting **Agency** and **Comptroller** not later than forty (40) **Days** after the making of such final payment by electronic funds transfer (EFT) or the mailing of such final payment. The statement shall specify the items upon which the claim will be based and any such claim shall be limited to such items.

ARTICLE 47. APPROVAL BY PUBLIC DESIGN COMMISSION

47.1 All works of art, including paintings, mural decorations, stained glass, statues, bas-reliefs, and other sculptures, monuments, fountains, arches, and other structures of a permanent character intended for ornament or commemoration, and every design of the same to be used in the performance of this **Contract**, and the design of all bridges, approaches, buildings, gates, fences, lamps, or structures to be erected, pursuant to the terms of this **Contract**, shall be submitted to the Art Commission, d/b/a the Public Design Commission of the City of New York, and shall be approved by the Public Design Commission prior to the erection or placing in position of the same. The final payment shall not become due or payable under this **Contract** unless and until the Public Design Commission shall certify that the design for the **Work** herein contracted for has been approved by the said Public Design Commission, and that the same has been executed in substantial accordance with the design so approved, pursuant to the provisions of Chapter 37, Section 854 of the **City** Charter, as amended.

CHAPTER X
CONTRACTOR'S DEFAULT

ARTICLE 48. COMMISSIONER'S RIGHT TO DECLARE CONTRACTOR IN DEFAULT

48.1 In addition to those instances specifically referred to in other Articles herein, the **Commissioner** shall have the right to declare the **Contractor** in default of this **Contract** if:

48.1.1 The **Contractor** fails to commence **Work** when notified to do so by the **Commissioner**; or
if

48.1.2 The **Contractor** shall abandon the **Work**; or if

48.1.3 The **Contractor** shall refuse to proceed with the **Work** when and as directed by the **Commissioner**; or if

48.1.4 The **Contractor** shall, without just cause, reduce its working force to a number which, if maintained, would be insufficient, in the opinion of the **Commissioner**, to complete the **Work** in accordance with the progress schedule; or if

48.1.5 The **Contractor** shall fail or refuse to increase sufficiently such working force when ordered to do so by the **Commissioner**; or if

48.1.6 The **Contractor** shall sublet, assign, transfer, convert or otherwise dispose of this **Contract** other than as herein specified; or sell or assign a majority interest in the **Contractor**; or if

48.1.7 The **Contractor** fails to secure and maintain all required insurance; or if

48.1.8 A receiver or receivers are appointed to take charge of the **Contractor's** property or affairs; or if

48.1.9 The **Commissioner** shall be of the opinion that the **Contractor** is or has been unnecessarily or unreasonably or willfully delaying the performance and completion of the **Work**, or the award of necessary subcontracts, or the placing of necessary material and equipment orders; or if

48.1.10 The **Commissioner** shall be of the opinion that the **Contractor** is or has been willfully or in bad faith violating any of the provisions of this **Contract**; or if

48.1.11 The **Commissioner** shall be of the opinion that the **Work** cannot be completed within the time herein provided therefor or within the time to which such completion may have been extended; provided, however, that the impossibility of timely completion is, in the **Commissioner's** opinion, attributable to conditions within the **Contractor's** control; or if

48.1.12 The **Work** is not completed within the time herein provided therefor or within the time to which the **Contractor** may be entitled to have such completion extended; or if

48.1.13 Any statement or representation of the **Contractor** in the **Contract** or in any document submitted by the **Contractor** with respect to the **Work**, the **Project**, or the **Contract** (or for purposes of securing the **Contract**) was untrue or incorrect when made; or if

48.1.14 The **Contractor** or any of its officers, directors, partners, five (5%) percent shareholders, principals, or other persons substantially involved in its activities, commits any of the acts or omissions specified as the grounds for debarment in the **PPB** Rules.

48.2 Before the **Commissioner** shall exercise his/her right to declare the **Contractor** in default, the **Commissioner** shall give the **Contractor** an opportunity to be heard, upon not less than two (2) **Days** notice.

ARTICLE 49. EXERCISE OF THE RIGHT TO DECLARE DEFAULT

49.1 The right to declare the **Contractor** in default for any of the grounds specified or referred to in Article 48 shall be exercised by sending the **Contractor** a notice, signed by the **Commissioner**, setting forth the ground or grounds upon which such default is declared (hereinafter referred to as a "Notice of Default").

49.2 The **Commissioner's** determination that the **Contractor** is in default shall be conclusive, final, and binding on the parties and such a finding shall preclude the **Contractor** from commencing a plenary action for any damages relating to the **Contract**. If the **Contractor** protests the determination of the **Commissioner**, the **Contractor** may commence an action in a court of competent jurisdiction of the State of New York under Article 78 of the New York Civil Practice Law and Rules.

ARTICLE 50. QUITTING THE SITE

50.1 Upon receipt of such notice the **Contractor** shall immediately discontinue all further operations under this **Contract** and shall immediately quit the **Site**, leaving untouched all plant, materials, equipment, tools, and supplies then on the **Site**.

ARTICLE 51. COMPLETION OF THE WORK

51.1 The **Commissioner**, after declaring the **Contractor** in default, may then have the **Work** completed by such means and in such manner, by contract with or without public letting, or otherwise, as he/she may deem advisable, utilizing for such purpose such of the **Contractor's** plant, materials, equipment, tools, and supplies remaining on the **Site**, and also such **Subcontractors**, as he/she may deem advisable.

51.2 After such completion, the **Commissioner** shall make a certificate stating the expense incurred in such completion, which shall include the cost of re-letting and also the total amount of liquidated damages (at the rate provided for in the **Contract**) from the date when the **Work** should have been completed by the **Contractor** in accordance with the terms hereof to the date of actual completion of the **Work**. Such certificate shall be binding and conclusive upon the **Contractor**, its sureties, and any person claiming under the **Contractor**, as to the amount thereof.

51.3 The expense of such completion, including any and all related and incidental costs, as so certified by the **Commissioner**, and any liquidated damages assessed against the **Contractor**, shall be charged against and deducted out of monies which are earned by the **Contractor** prior to the date of default. Should the expense of such completion, as certified by the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

ARTICLE 52. PARTIAL DEFAULT

52.1 In case the **Commissioner** shall declare the **Contractor** in default as to a part of the **Work** only, the **Contractor** shall discontinue such part, shall continue performing the remainder of the **Work** in strict conformity with the terms of this **Contract**, and shall in no way hinder or interfere with any **Other**

Contractor(s) or persons whom the **Commissioner** may engage to complete the **Work** as to which the **Contractor** was declared in default.

52.2 The provisions of this Chapter relating to declaring the **Contractor** in default as to the entire **Work** shall be equally applicable to a declaration of partial default, except that the **Commissioner** shall be entitled to utilize for completion of the part of the **Work** as to which the **Contractor** was declared in default only such plant, materials, equipment, tools, and supplies as had been previously used by the **Contractor** on such part.

ARTICLE 53. PERFORMANCE OF UNCOMPLETED WORK

53.1 In completing the whole or any part of the **Work** under the provisions of this Chapter X, the **Commissioner** shall have the power to depart from or change or vary the terms and provisions of this **Contract**, provided, however, that such departure, change or variation is made for the purpose of reducing the time or expense of such completion. Such departure, change or variation, even to the extent of accepting a lesser or different performance, shall not affect the conclusiveness of the **Commissioner's** certificate of the cost of completion referred to in Article 51, nor shall it constitute a defense to an action to recover the amount by which such certificate exceeds the amount which would have been payable to the **Contractor** hereunder but for its default.

ARTICLE 54. OTHER REMEDIES

54.1 In addition to the right to declare the **Contractor** in default pursuant to this Chapter X, the **Commissioner** shall have the absolute right, in his/her sole discretion and without a hearing, to complete or cause to be completed in the same manner as described in Articles 51 and 53, any or all unsatisfactory or uncompleted punch list **Work** that remains after the completion date specified in the **Final Approved Punch List**. A written notice of the exercise of this right shall be sent to the **Contractor** who shall immediately quit the **Site** in accordance with the provisions of Article 50.

54.2 The expense of completion permitted under Article 54.1, including any and all related and incidental costs, as so certified by the **Commissioner**, shall be charged against and deducted out of monies which have been earned by the **Contractor** prior to the date of the exercise of the right set forth in Article 54.1; the balance of such monies, if any, subject to the other provisions of this **Contract**, to be paid to the **Contractor** without interest after such completion. Should the expense of such completion, as certified by the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

54.3 The previous provisions of this Chapter X shall be in addition to any and all other remedies available under **Law** or in equity.

54.4 The exercise by the **City** of any remedy set forth herein shall not be deemed a waiver by the **City** of any other legal or equitable remedy contained in this **Contract** or provided under **Law**.

CHAPTER XI
MISCELLANEOUS PROVISIONS

ARTICLE 55. CONTRACTOR'S WARRANTIES

55.1 In consideration of, and to induce, the award of this **Contract** to the **Contractor**, the **Contractor** represents and warrants:

55.1.1 That it is financially solvent, sufficiently experienced and competent to perform the **Work**; and

55.1.2 That the facts stated in its bid and the information given by it pursuant to the Information for Bidders is true and correct in all respects; and

55.1.3 That it has read and complied with all requirements set forth in the **Contract**.

ARTICLE 56. CLAIMS AND ACTIONS THEREON

56.1 Any claim, that is not subject to dispute resolution under the **PPB** Rules or this **Contract**, against the **City** for damages for breach of **Contract** shall not be made or asserted in any action, unless the **Contractor** shall have strictly complied with all requirements relating to the giving of notice and of information with respect to such claims, as herein before provided.

56.2 Nor shall any action be instituted or maintained on any such claims unless such action is commenced within six (6) months after **Substantial Completion**; except that:

56.2.1 Any claims arising out of events occurring after **Substantial Completion** and before **Final Acceptance** of the **Work** shall be asserted within six (6) months of **Final Acceptance** of the **Work**;

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

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

ARTICLE 57. INFRINGEMENT

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

ARTICLE 58. NO CLAIM AGAINST OFFICIALS, AGENTS OR EMPLOYEES

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

ARTICLE 59. SERVICE OF NOTICES

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

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

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

ARTICLE 60. UNLAWFUL PROVISIONS DEEMED STRICKEN FROM CONTRACT

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

ARTICLE 61. ALL LEGAL PROVISIONS DEEMED INCLUDED

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

ARTICLE 62. TAX EXEMPTION

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

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

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

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

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

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

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

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

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

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

ARTICLE 63. INVESTIGATION(S) CLAUSE

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

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

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

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

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

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

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

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

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

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

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

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

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

63.8 Definitions:

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

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

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

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

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

ARTICLE 64. TERMINATION BY THE CITY

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

64.1.1 Stop **Work** on the date specified in the notice;

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

64.1.3 Cancel all cancelable orders for material and equipment;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

64.2.4(d) Direct Costs shall not include overhead.

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

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

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

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

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

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

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

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

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

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

65.2.2(b) To remove to Federal Court; and

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

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

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

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

ARTICLE 66. PARTICIPATION IN AN INTERNATIONAL BOYCOTT

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

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

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

ARTICLE 67. LOCALLY BASED ENTERPRISE PROGRAM

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

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

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

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

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

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

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

67.6.2 Declaring the **Contractor** in default;

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

ARTICLE 68. ANTITRUST

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

ARTICLE 69. MacBRIDE PRINCIPLES PROVISIONS

69.1 Notice To All Prospective **Contractors**:

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

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

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

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

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

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

69.2.1 Have no business operations in Northern Ireland, or

69.2.2 Shall take lawful steps in good faith to conduct any business operations they have in Northern Ireland in accordance with the MacBride Principles, and shall permit independent monitoring of their compliance with such principles.

69.3 For purposes of this Article, the following terms shall have the following meanings:

69.3.1 "MacBride Principles" shall mean those principles relating to nondiscrimination in employment and freedom of work-place opportunity which require employers doing business in Northern Ireland to:

69.3.1(a) increase the representation of individuals from under-represented religious groups in the workforce, including managerial, supervisory, administrative, clerical and technical jobs;

69.3.1(b) take steps to promote adequate security for the protection of employees from under-represented religious groups both at the work-place and while traveling to and from **Work**;

69.3.1(c) ban provocative religious or political emblems from the workplace;

69.3.1(d) publicly advertise all job openings and make special recruitment efforts to attract applicants from under-represented religious groups;

69.3.1(e) establish layoff, recall, and termination procedures which do not in practice favor a particular religious group;

69.3.1(f) abolish all job reservations, apprenticeship restrictions and different employment criteria which discriminate on the basis of religion;

69.3.1(g) develop training programs that will prepare substantial numbers of current employees from under-represented religious groups for skilled jobs, including the expansion of existing programs and the creation of new programs to train, upgrade, and improve the skills of workers from under-represented religious groups;

69.3.1(h) establish procedures to asses, identify, and actively recruit employees from under-represented religious groups with potential for further advancement; and

69.3.1(i) appoint a senior management staff member to oversee affirmative action efforts and develop a timetable to ensure their full implementation.

69.4 The **Contractor** agrees that the covenants and representations in Article 69.2 are material conditions to this **Contract**. In the event the **Agency** receives information that the **Contractor** who made the stipulation required by this Article 69 is in violation thereof, the **Agency** shall review such information and give the **Contractor** an opportunity to respond. If the **Agency** finds that a violation has occurred, the **Agency** shall have the right to declare the **Contractor** in default in default and/or terminate this **Contract** for cause and procure supplies, services or **Work** from another source in the manner the **Agency** deems proper. In the event of such termination, the **Contractor** shall pay to the **Agency**, or the **Agency** in its sole discretion may withhold from any amounts otherwise payable to the **Contractor**, the difference between the **Contract** price for the uncompleted portion of this **Contract** and the cost to the **Agency** of completing performance of this **Contract** either itself or by engaging another **Contractor** or **Contractors**. In the case of a requirement **Contract**, the **Contractor** shall be liable for such difference in price for the entire amount of supplies required by the **Agency** for the uncompleted term of **Contractor's Contract**. In the case of a construction **Contract**, the **Agency** shall also have the right to hold the **Contractor** in partial or total default in accordance with the default provisions of this **Contract**, and/or may seek debarment or suspension of the **Contractor**. The rights and remedies of the **Agency** hereunder shall be in addition to, and not in lieu of, any rights and remedies the **Agency** has pursuant to this **Contract** or by operation of **Law**.

ARTICLE 70. ELECTRONIC FILING/NYC DEVELOPMENT HUB

70.1 The **Contractor** shall electronically file all alteration type-2 and alteration type-3 applications via the New York City Development Hub Web site, except applications for the following types of minor alterations: enlargements, curb cuts, legalizations, fire alarms, builders pavement plans, and jobs filed on Landmark Preservation Commission calendared properties. All such filings must be professionally certified. Information about electronic filing via the New York City Development Hub is available on the **City** Department of Buildings Web site at www.nyc.gov/buildings.

ARTICLE 71. PROHIBITION OF TROPICAL HARDWOODS

71.1 Tropical hardwoods, as defined in Section 165 of the New York State Finance Law (Finance Law), shall not be utilized in the performance of this **Contract** except as expressly permitted by Section 165 of the Finance Law.

ARTICLE 72. CONFLICTS OF INTEREST

72.1 Section 2604 of the **City** Charter and other related provisions of the **City** Charter, the Administrative Code, and the Penal Law are applicable under the terms of this **Contract** in relation to conflicts of interest and shall be extended to **Subcontractors** authorized to perform **Work**, labor and services pursuant to this **Contract** and further, it shall be the duty and responsibility of the **Contractor** to so inform its respective **Subcontractors**. Notice is hereby given that, under certain circumstances, penalties may be invoked against the donor as well as the recipient of any form of valuable gift.

ARTICLE 73. MERGER CLAUSE

73.1 The written **Contract** herein, contains all the terms and conditions agreed upon by the parties hereto, and no other agreement, oral or otherwise, regarding the subject matter of this **Contract** shall be deemed to exist or to bind any of the parties hereto, or to vary any of the terms contained herein.

ARTICLE 74. STATEMENT OF WORK

74.1 The **Contractor** shall furnish all labor and materials and perform all **Work** in strict accordance with the **Specifications** and **Addenda** thereto, numbered 3.

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: Twenty-six million, two hundred ninety-four thousand, three hundred ninety-six dollars and fifty cents. Dollars, ($ 26,294,396.50), this said sum being the amount at which the **Contract** was awarded to the **Contractor** at a public letting thereof, based upon the **Contractor's** bid for the **Contract**.

ARTICLE 76. ELECTRONIC FUNDS TRANSFER

76.1 In accordance with Section 6-107.1 of the Administrative Code, the **Contractor** agrees to accept payments under this **Contract** from the **City** by electronic funds transfer (EFT). An EFT is any transfer of funds, other than a transaction originated by check, draft or similar paper instrument, which is initiated through an electronic terminal, telephonic instrument or computer or magnetic tape so as to order, instruct or authorize a financial institution to debit or credit an account. Prior to the first payment made under this **Contract**, the **Contractor** shall designate one financial institution or other authorized payment agent and shall complete the attached "EFT Vendor Payment Enrollment Form" in order to provide the Commissioner of the **City** Department of Finance with information necessary for the **Contractor** to receive electronic funds transfer payments through a designated financial institution or authorized payment agent. The crediting of the amount of a payment to the appropriate account on the books of a financial institution or other authorized payment agent designated by the **Contractor** shall constitute full satisfaction by the **City** for the amount of the payment under this **Contract**. The account information supplied by the **Contractor** to facilitate the electronic funds transfer shall remain confidential to the fullest extent provided by **Law**.

76.2 The **Commissioner** may waive the application of the requirements of this Article 76 to payments on contracts entered into pursuant to Section 315 of the **City** Charter. In addition, the Commissioner of the Department of Finance and the Comptroller may jointly issue standards pursuant to

which the **Agency** may waive the requirements of this Article 76 for payment in the following circumstances: (i) for individuals or classes of individuals for whom compliance imposes a hardship; (ii) for classifications or types of checks; or (iii) in other circumstances as may be necessary in the interest of the **City**.

ARTICLE 77. RECORDS RETENTION

77.1 The **Contractor** agrees to retain all books, records, and other documents relevant to this **Contract** for six years after the final payment or termination of this **Contract**, whichever is later. **City**, state, and federal auditors and any other persons duly authorized by the **City** shall have full access to and the right to examine any such books, records, and other documents during the retention period.

ARTICLE 78. PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT

NOTICE TO ALL PROSPECTIVE CONTRACTORS

ARTICLE I. M/WBE PROGRAM

Local Law No. 129 of 2005 added and Local Law 1 of 2013 amended Section 6-129 of the Administrative Code of the City of New York (hereinafter "Section 6-129"). Section 6-129 establishes the program for participation in City procurement ("M/WBE Program") by minority- owned business enterprises ("MBEs") and women-owned business enterprises ("WBEs"), certified in accordance with Section 1304 of the New York City Charter. As stated in Section 6-129, the intent of the program is to address the impact of discrimination on the City's procurement process, and to promote the public interest in avoiding fraud and favoritism in the procurement process, increasing competition for City business, and lowering contract costs. The contract provisions contained herein are pursuant to Section 6-129, and the rules of the Department of Small Business Services ("DSBS") promulgated thereunder.

If this Contract is subject to the M/WBE Program established by Section 6-129, the specific requirements of MBE and/or WBE participation for this Contract are set forth in Schedule B of the Contract (entitled the "M/WBE Utilization Plan"), and are detailed below. The Contractor must comply with all applicable MBE and WBE requirements for this Contract.

All provisions of Section 6-129 are hereby incorporated in the Contract by reference and all terms used herein that are not defined herein shall have the meanings given such terms in Section 6-129. Article I, Part A, below, sets forth provisions related to the participation goals for construction, standard and professional services contracts. Article I, Part B, below, sets forth miscellaneous provisions related to the M/WBE Program.

PART A

PARTICIPATION GOALS FOR CONSTRUCTION, STANDARD AND PROFESSIONAL SERVICES CONTRACTS OR TASK ORDERS

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

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

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

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

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

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

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

(ii) **Participation Goals** on a Master Services Agreement will be established for individual Task Orders issued after the Master Services Agreement is awarded. If **Participation Goals** have been established on a Task Order, a contractor shall be required to submit a Schedule B – M/WBE Utilization Plan For Independently Registered Task Orders That Are Issued Pursuant to Master Services Agreements, Part II (see Pages 2-4) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; and (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end. The contractor must engage in good faith efforts to meet the **Participation Goals** as established for the Task Order unless Agency has granted the contractor a pre-award waiver of the Participation Goals in accordance with Section 6-129 and Part A, Section 10 below.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PART B: MISCELLANEOUS

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

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

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

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

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

ARTICLE II. ENFORCEMENT

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

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

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

(a) entering into an agreement with the Contractor allowing the Contractor to cure the violation;
(b) revoking the Contractor's pre-qualification to bid or make proposals for future contracts;
(c) making a finding that the Contractor is in default of the Contract;
(d) terminating the Contract;
(e) declaring the Contractor to be in breach of Contract;
(f) withholding payment or reimbursement;
(g) determining not to renew the Contract;
(h) assessing actual and consequential damages;
(i) assessing liquidated damages or reducing fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the M/WBE Program, or in meeting the purposes of the Contract, the costs of meeting utilization goals through additional procurements, the administrative costs of investigation and enforcement, or other factors set forth in the Contract;
(j) exercising rights under the Contract to procure goods, services or construction from another contractor and charge the cost of such contract to the Contractor that has been found to be in noncompliance; or
(k) taking any other appropriate remedy.

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

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

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

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

IN WITNESS WHEREOF, the Deputy 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: NORTHEAST REMSCO CONSTRUCTION, INC.

By: _____
(Member of Firm or Officer of Corporation)

Title: _____

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

_____
Secretary

(Seal)

_____

ACKNOWLEDGEMENT OF PRINCIPAL, IF A CORPORATION

State of New York County of Queens ss:

On this 6 day of Nov, 2017, before me personally came ROLANDO ACOSTA to me known who, being by me duly sworn did depose and say that he resides at 1517 SILVERTON RD, TOMS RIVER NJ that he is the PRESIDENT of the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he signed his name thereto by like order.

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

Notary Public or Commissioner of Deeds

ACKNOWLEDGEMENT OF PRINCIPAL, IF A PARTNERSHIP

State of _____ County of _____ ss:

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

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGEMENT OF PRINCIPAL, IF AN INDIVIDUAL

State of _____ _____ County of _____ ss:

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

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGEMENT BY COMMISSIONER

State of New York County of Queens ss:

On this 9th day of Nov., 2017, before me personally came Eric Macfarlane to me known, and known to be the Deputy Commissioner of the Department of Design and Construction of The City of New York, the person described as such in and who as such executed the foregoing instrument and acknowledged to me that he executed the same as Deputy Commissioner for the purposes therein mentioned.

Brenda A Barreiro

Notary Public or Commissioner of Deeds

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

AUTHORITY

MAYOR'S CERTIFICATE NO. CBX DATED
BUDGET DIRECTOR'S CERTIFICATE NO. 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

Twenty-six million, two hundred ninety-four thousand, three hundred ninety-six dollars and fifty cents.

Dollars ($ 26,294,396.50)

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 92 to 95): 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

KNOW ALL PERSONS BY THESE PRESENTS:,
That we, _____

_____

_____

hereinafter referred to as the "Principal,"
and, _____

_____

_____

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

_____

_____

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

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

_____

_____

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

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns, shall well and faithfully perform the said Contract and all modifications, amendments, additions and alterations thereto that may hereafter be made, according to its terms and its true intent and meaning, including repair and or replacement of defective work and guarantees of maintenance for the periods stated in the Contract, and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of the Principal's default of the Contract, and shall fully reimburse and repay the City for all outlay and expense which the City may incur in making

Performance Bond #1 (Pages 92 to 95): 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.

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 92 to 95): 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.

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

_____ day of _____, 20_____.

(Seal)

_____(L.S.)
Principal

By:_____

(Seal)
Surety

By:_____

_____

(Seal)
Surety

By:_____

_____

(Seal)
Surety

By:_____

_____

(Seal)
Surety

By:_____

_____

(Seal)
Surety

By:_____

Bond Premium Rate _____

Bond Premium Cost _____

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

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

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

Performance Bond #1 (Pages 92 to 95): 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.

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/she signed his/her name to the foregoing instrument by order of the directors of said corporation as the duly authorized and binding act thereof.

_____
Notary Public or Commissioner of Deeds.

ACKNOWLEDGMENT OF PRINCIPAL IF A PARTNERSHIP

State of _____ County of _____ ss:

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

_____
Notary Public or Commissioner of Deeds.

ACKNOWLEDGMENT OF PRINCIPAL IF AN INDIVIDUAL

State of _____ County of _____ ss:

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

_____
Notary Public or Commissioner of Deeds

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

* * * * * * * *

Affix Acknowledgments and Justification of Sureties.

Performance Bond #2 (Pages 96 to 99): Use if the total contract price is more than $5 Million.

PERFORMANCE BOND #2

KNOW ALL PERSONS BY THESE PRESENTS:,

That we, Northeast Remsco Construction Inc.

1433 Route 34 South B1, Farmingdale, NJ 07727

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 Twenty Six Million Two Hundred Ninety Four Thousand Three Hundred Ninety Six Dollars and 50/100

($ 26,294,396.50) 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: HED-564, E-Pin: 85017B0068001, DDC Pin: 8502017WM0014C, New 20" Sub-Aqueous Water Main to City Island, Borough of the Bronx

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

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns, shall well and faithfully perform the said Contract and all modifications, amendments, additions and alterations thereto that may hereafter be made, according to its terms and its true intent and meaning, including repair and or replacement of defective work and guarantees of maintenance for the periods stated in the Contract, and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of the Principal's default of the Contract, and shall fully reimburse and repay the City for all outlay and expense which the City may incur in making

Performance Bond #2 (Pages 96 to 99): Use if the total contract price is more than $5 Million.

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 96 to 99): Use if the total contract price is more than $5 Million.

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

3rd day of November 20 17.

(Seal)

NORTHEAST REMSCO CONSTRUCTION INC. CORPORATE SEAL 1991 NEW JERSEY

Northeast Remsco Construction Inc. (L.S.)
Principal

By: ROLANDO E. ACOSTA, PRESIDENT

(Seal)

Surety
Liberty Mutual Insurance Company

By: Lisa Nosal, Atty-In-Fact Phone: (973) 890-0900

(Seal)

Surety

By:

(Seal)

Surety

By:

(Seal)

Surety

By:

(Seal)

Surety

By:

Bond Premium Rate _____.

Bond Premium Cost _____.

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

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

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

Performance Bond #2 (Pages 96 to 99): Use if the total contract price is more than $5 Million.

ACKNOWLEDGMENT OF PRINCIPAL IF A CORPORATION

State of NEW JERSEY County of MONMOUTH ss:

On this 3RD day of NOVEMBER, 20 17 before me personally came ROLANDO ACOSTA to me known, who, being by me duly sworn did depose and say that he resides at 1517 SILVERTON ROAD TOMS RIVER, NJ 08755; that he/~~she~~ is the PRESIDENT of the corporation described in and which executed the foregoing instrument; that he/~~she~~ signed his/~~her~~ name to the foregoing instrument by order of the directors of said corporation as the duly authorized and binding act thereof.

JODI BUCKMAN NOTARY PUBLIC MY COMMISSION EXPIRES 05/20/2021 2276324 NEW JERSEY

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.

ACKNOWLEDGEMENT OF SURETY

State of New Jersey]
|-ss
County of Passaic]

On 11/03/2017, before me personally came Lisa Nosal to me known, who, being by me duly sworn, did depose and say that she is an attorney-in-fact of Liberty Mutual Insurance Company the corporation described in and which executed the within instrument; that she knows the corporate seal of said corporation, and that the seal affixed to the within instrument is such corporate seal, and that she signed the said instrument and affixed the said seal as Attorney-in-Fact by authority of the Board of Directors of said corporation and by authority of this office under the Standing Resolutions thereof.

My Commission expires:

Notary Public

STEPHANIE F. FOY
NOTARY PUBLIC
STATE OF NEW JERSEY
MY COMMISSION EXPIRES OCTOBER 27, 2018

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. 7801861

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

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation 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 W. Mallory; Lisa Nosal; Louis A. Vlahakes; Pamela J. Boyle; Robert E. Culnen

all of the city of Totowa, state of NJ 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 14th day of June, 2017.

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

By: _____
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 14th day of June, 2017, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of 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 King of Prussia, Pennsylvania, on the day and year first above written.

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: _____
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts – SECTION 5. Surety Bonds and Undertakings. Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, 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 3rd day of November, 20 17.

By: _____
Renee C. Llewellyn, 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.

LMS_12873_022017

Liberty Mutual SURETY

LIBERTY MUTUAL INSURANCE COMPANY

FINANCIAL STATEMENT — DECEMBER 31, 2016

Assets

Cash and Bank Deposits	$1,092,914,837
*Bonds — U.S Government	1,406,763,970
*Other Bonds	11,379,916,523
*Stocks	10,349,761,988
Real Estate	290,265,760
Agents' Balances or Uncollected Premiums	4,709,977,463
Accrued Interest and Rents	112,757,395
Other Admitted Assets	14,659,523,751
Total Admitted Assets	**$44,001,881,687**

Liabilities

Unearned Premiums		$6,929,723,299
Reserve for Claims and Claims Expense		17,233,877,300
Funds Held Under Reinsurance Treaties		208,362,823
Reserve for Dividends to Policyholders		944,909
Additional Statutory Reserve		39,649,905
Reserve for Commissions, Taxes and Other Liabilities		3,061,117,958
Total		**$27,473,676,194**
Special Surplus Funds	$95,257,334	
Capital Stock	10,000,000	
Paid in Surplus	9,229,250,104	
Unassigned Surplus	7,193,698,055	
Surplus to Policyholders		**16,528,205,493**
Total Liabilities and Surplus		**$44,001,881,687**

LIBERTY MUTUAL INSURANCE COMPANY INCORPORATED 1912 MASSACHUSETTS

* 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, 2016, 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 23rd day of March, 2017.

T A Mikolajewski

Assistant Secretary

Payment Bond (Pages 100 to 103): Use for any contract for which a Payment Bond is required.

Bond No. 015200819

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS, That we, _____

Northeast Remsco Construction Inc.

1433 Route 34 South B1, Farmingdale, NJ 07727

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

Twenty Six Million Two Hundred Ninety Four Thousand Three Hundred Ninety Six Dollars and 50/100

($ 26,294,396.50) 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: HED-564, E-Pin: 85017B0068001, DDC Pin: 8502017WM0014C, New 20" Sub-Aqueous Water Main to City Island, Borough of the Bronx

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

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns and other Subcontractors to whom Work under this Contract is sublet and his or their successors and assigns shall promptly pay or cause to be paid all lawful claims for

(a) Wages and compensation for labor performed and services rendered by all persons engaged in the prosecution of the Work under said Contract, and any amendment or extension thereof or addition thereto, whether such persons be agents servants or employees of the Principal or any such Subcontractor, including all persons so engaged who perform the work of laborers or mechanics at or in the vicinity of the site

Payment Bond (Pages 100 to 103): Use for any contract for which a Payment Bond is required.

of the Project regardless of any contractual relationship between the Principal or such Subcontractors, or his or their successors or assigns, on the one hand and such laborers or mechanics on the other, but not including office employees not regularly stationed at the site of the project; and

(b) Materials and supplies (whether incorporated in the permanent structure or not), as well as teams, fuels, oils, implements or machinery furnished, used or consumed by said Principal or any subcontractor at or in the vicinity of the site of the Project in the prosecution of the Work under said Contract and any amendment or extension thereof or addition thereto; then this obligation shall be void, otherwise to remain in full force and effect.

This bond is subject to the following additional conditions, limitations and agreements:

(a) The Principal and Surety (Sureties) agree that this bond shall be for the benefit of any materialmen or laborer having a just claim, as well as the City itself.

(b) All persons who have performed labor, rendered services or furnished materials and supplies, as aforesaid, shall have a direct right of action against the Principal and his, its or their successors and assigns, and the Surety (Sureties) herein, or against either or both or any of them and their successors and assigns. Such persons may sue in their own name, and may prosecute the suit to judgment and execution without the necessity of joining with any other persons as party plaintiff.

(c) The Principal and Surety (Sureties) agree that neither of them will hold the City liable for any judgment for costs of otherwise, obtained by either or both of them against a laborer or materialman in a suit brought by either a laborer or materialman under this bond for moneys allegedly due for performing work or furnishing material.

(d) The Surety (Sureties) or its successors and assigns shall not be liable for any compensation recoverable by an employee or laborer under the Workmen's Compensation Law.

(e) In no event shall the Surety (Sureties), or its successors or assigns, be liable for a greater sum than the penalty of this bond or be subject to any suit, action or proceeding hereon that is instituted by any person, firm, or corporation hereunder later than two years after the complete performance of said Contract and final settlement thereof.

The Principal, for himself and his successors and assigns, and the Surety (Sureties), for itself and its successors and assigns, do hereby expressly waive any objection that might be interposed as to the right of the City to require a bond containing the foregoing provisions, and they do hereby further expressly waive any defense which they or either of them might interpose to an action brought hereon by any person, firm or corporation, including subcontractors, materialmen and third persons, for work, labor, services, supplies or material performed rendered, or furnished as aforesaid upon the ground that there is no law authorizing the City to require the foregoing provisions to be place in this bond.

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

Payment Bond (Pages 100 to 103): Use for any contract for which a Payment Bond is required.

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 3rd day of November, 2017.

(Seal)

NORTHEAST REMSCO CONSTRUCTION INC. CORPORATE SEAL 1991 NEW JERSEY

Northeast Remsco Construction Inc. (L.S.)
Principal

By: ROLANDO E. ACOSTA, PRESIDENT

(Seal)

Liberty Mutual Insurance Company
Surety

By:
Lisa Nosal, Atty-In-Fact Phone: (973) 890-0900

(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 100 to 103): Use for any contract for which a Payment Bond is required.

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of NEW JERSEY County of MONMOUTH ss:

On this 3RD day of NOVEMBER 2017, before me personally came ROLANDO ACOSTA to me known, who, being by me duly sworn did depose and say that he resides at 1517 SILVERTON ROAD, TOMS RIVER, NJ 08755 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.

JODI BUCKMAN MY COMMISSION EXPIRES NOTARY NO. NOTARY PUBLIC 2276324 06/20/2021 NEW JERSEY

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.

ACKNOWLEDGEMENT OF SURETY

State of New Jersey]
|-ss
County of Passaic]

On 11/03/2017, before me personally came Lisa Nosal to me known, who, being by me duly sworn, did depose and say that she is an attorney-in-fact of Liberty Mutual Insurance Company the corporation described in and which executed the within instrument; that she knows the corporate seal of said corporation, and that the seal affixed to the within instrument is such corporate seal, and that she signed the said instrument and affixed the said seal as Attorney-in-Fact by authority of the Board of Directors of said corporation and by authority of this office under the Standing Resolutions thereof.

My Commission expires:

Notary Public

STEPHANIE F. FOY
NOTARY PUBLIC
STATE OF NEW JERSEY
MY COMMISSION EXPIRES OCTOBER 27, 2018

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. 7801862

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

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation 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 W. Mallory; Lisa Nosal; Louis A. Vlahakes; Pamela J. Boyle; Robert E. Culnen

all of the city of Totowa, state of NJ 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 14th day of June, 2017.

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

By: _____
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 14th day of June, 2017, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of 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 King of Prussia, Pennsylvania, on the day and year first above written.

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: _____
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts – SECTION 5. Surety Bonds and Undertakings. Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, 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 3rd day of November, 2017.

By: _____
Renee C. Llewellyn, 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.

LMS_12873_022017

Liberty Mutual SURETY

LIBERTY MUTUAL INSURANCE COMPANY

FINANCIAL STATEMENT — DECEMBER 31, 2016

Assets

Cash and Bank Deposits	$1,092,914,837
*Bonds — U.S Government	1,406,763,970
*Other Bonds	11,379,916,523
*Stocks	10,349,761,988
Real Estate	290,265,760
Agents' Balances or Uncollected Premiums	4,709,977,463
Accrued Interest and Rents	112,757,395
Other Admitted Assets	14,659,523,751
Total Admitted Assets	**$44,001,881,687**

Liabilities

Unearned Premiums		$6,929,723,299
Reserve for Claims and Claims Expense		17,233,877,300
Funds Held Under Reinsurance Treaties		208,362,823
Reserve for Dividends to Policyholders		944,909
Additional Statutory Reserve		39,649,905
Reserve for Commissions, Taxes and Other Liabilities		3,061,117,958
Total		**$27,473,676,194**
Special Surplus Funds	$95,257,334	
Capital Stock	10,000,000	
Paid in Surplus	9,229,250,104	
Unassigned Surplus	7,193,698,055	
Surplus to Policyholders		**16,528,205,493**
Total Liabilities and Surplus		**$44,001,881,687**

LIBERTY MUTUAL INSURANCE COMPANY INCORPORATED 1912 MASSACHUSETTS

* 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, 2016, 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 23rd day of March, 2017.

T A Mikolajewski

Assistant Secretary

CERTIFICATE OF LIABILITY INSURANCE REVISED

DATE (MM/DD/YYYY): 11/17/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Jean Waliky
C&H AGENCY 783 Riverview Drive P.O. Box 324 Totowa NJ 07511	PHONE (A/C, No, Ext): (973) 890-0900 FAX (A/C, No): (973) 812-9860 E-MAIL ADDRESS: jwaliky@chagency.com
INSURED Northeast Remsco Construction, Inc. 1433 Highway 34 South, B1 Farmingdale, NJ 07727	INSURER(S) AFFORDING COVERAGE / NAIC # INSURER A: Starr Indemnity & Liability 38318 INSURER B: National Union Fire Ins. Co. 19445 INSURER C: INSURER D: INSURER E: INSURER F:

COVERAGES **CERTIFICATE NUMBER:** 17-18 GL,A,U,WC **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR X XCU Included X Contractual Liab. GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC OTHER:			1000025493171	4/1/2017	4/1/2018	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG 	$ 2,000,000 $ 500,000 $ 10,000 $ 2,000,000 $ 4,000,000 $ 4,000,000 $
A	AUTOMOBILE LIABILITY X ANY AUTO X ALL OWNED AUTOS X SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS			SISIPCA08367317	4/1/2017	4/1/2018	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) PIP-Additional	$ 2,000,000 $ $ $ $
B	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED X RETENTION $ 10,000			BE051130777	4/1/2017	4/1/2018	EACH OCCURRENCE AGGREGATE 	$ 20,000,000 $ 20,000,000 $
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		100 0002116 Includes USL&H	4/1/2017	4/1/2018	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
B	Maritime Employers Liability (Jones Act)			051768204	7/1/2017	7/1/2018		$1,000,000

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

RE: FMS ID No: HED-564, E-PIN No: 85017B0068001, DDC PIN No. 8502017WM0014C - New 20" Sub-Aqueous Water Main to City Island - Borough of the Bronx.

The City of New York, including its officials and employees is included as Additional Insured for General Liability and Auto with respect to this project, with coverage at least as broad as ISO Form CG 20 10, CG 20 37, and CG 20 26 but only if required by written and signed contract per attached policy forms.

CERTIFICATE HOLDER

NYC Department of Design & Construction
30-30 Thomson Avenue
Long Island City, NY 11101

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Jean Waliky

© 1988-2014 ACORD CORPORATION. All rights reserved.

The ACORD name and logo are registered marks of ACORD

Project ID.: HED564

CERTIFICATION BY INSURANCE BROKER OR AGENT

The undersigned insurance broker represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects.

C & H Agency, Inc.
[Name of broker or agent (typewritten)]

783 Riverview Drive, Totowa, NJ 07512
[Address of broker or agent (typewritten)]

jwaliky@chagency.com
[Email address of broker or agent (typewritten)]

973-435-3307
[Phone number/Fax number of broker or agent (typewritten)]

Jean Waliky
[Signature of authorized official, broker, or agent]

Jean Waliky - Account Executive
[Name and title of authorized official, broker, or agent (typewritten)]

State of New Jersey)
) ss.:
County of Passaic)

Sworn to before me this 17th day of November, 20 17

Stephanie F. Foy
NOTARY PUBLIC FOR THE STATE OF New Jersey

STEPHANIE F. FOY
NOTARY PUBLIC
STATE OF NEW JERSEY
MY COMMISSION EXPIRES OCTOBER 27, 2018

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):	Location(s) Of Covered Operations
Where Required By Written Contract	Where Required By Written Contract
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or

2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and

2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or

2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

© Insurance Services Office, Inc., 2012

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):	Location And Description Of Completed Operations
Where Required By Written Contract	Where Required By Written Contract
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the Schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and

2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or

2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

© Insurance Services Office, Inc., 2012

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – DESIGNATED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)
Where Required By Written Contract
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. **Section II – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by your acts or omissions or the acts or omissions of those acting on your behalf:

1. In the performance of your ongoing operations; or

2. In connection with your premises owned by or rented to you.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and

2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or

2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

NEW YORK STATE | Workers' Compensation Board

CERTIFICATE OF NYS WORKERS' COMPENSATION INSURANCE COVERAGE

1a. Legal Name & Address of Insured (use street address only) Northeast Remsco Construction, Inc. 1433 Highway 34 South, B1 Farmingdale, NJ 07727 Work Location of Insured *(Only required if coverage is specifically limited to certain locations in New York State, i.e., a Wrap-Up Policy)*	1b. Business Telephone Number of Insured (732) 557-6100 1c. NYS Unemployment Insurance Employer Registration Number of Insured 1d. Federal Employer Identification Number of Insured or Social Security Number 22-3131714
2. Name and Address of Entity Requesting Proof of Coverage (Entity Being Listed as the Certificate Holder) New York City Department of Design & Construction 30-30 Thomson Avenue Long Island City, NY 11101	3a. Name of Insurance Carrier Starr Indemnity & Liability Co. 3b. Policy Number of Entity Listed in Box "1a" 100 0002116 3c. Policy effective period 4/1/2017 to 4/1/2018 3d. The Proprietor, Partners or Executive Officers are ☒ included. (Only check box if all partners/officers included) ☐ all excluded or certain partners/officers excluded.

This certifies that the insurance carrier indicated above in box "3" insures the business referenced above in box "1a" for workers' compensation under the New York State Workers' Compensation Law. **(To use this form, New York (NY) must be listed under Item 3A on the INFORMATION PAGE of the workers' compensation insurance policy).** The Insurance Carrier or its licensed agent will send this Certificate of Insurance to the entity listed above as the certificate holder in box "2".

Will the carrier notify the certificate holder within 10 days of a policy being cancelled for non-payment of premium or within 30 days if cancelled for any other reason or if the insured is otherwise eliminated from the coverage indicated on this certificate prior to the end of the policy effective period? ☐ YES ☒ NO

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policy listed, nor does it confer any rights or responsibilities beyond those contained in the referenced policy.

This certificate may be used as evidence of a Workers' Compensation contract of insurance only while the underlying policy is in effect.

Please Note: Upon cancellation of the workers' compensation policy indicated on this form, if the business continues to be named on a permit, license or contract issued by a certificate holder, the business must provide that certificate holder with a new Certificate of Workers' Compensation Coverage or other authorized proof that the business is complying with the mandatory coverage requirements of the New York State Workers' Compensation Law.

Under penalty of perjury, I certify that I am an authorized representative or licensed agent of the insurance carrier referenced above and that the named insured has the coverage as depicted on this form.

Approved by: Jean Waliky
(Print name of authorized representative or licensed agent of insurance carrier)

Approved by: Jean Waliky 11/17/2017
(Signature) (Date)

Title: Account Executive

Telephone Number of authorized representative or licensed agent of insurance carrier: 973-890-0900

Please Note: Only insurance carriers and their licensed agents are authorized to issue Form C-105.2. Insurance brokers are NOT authorized to issue it.

Workers' Compensation Law

Section 57. Restriction on issue of permits and the entering into contracts unless compensation is secured.

1. The head of a state or municipal department, board, commission or office authorized or required by law to issue any permit for or in connection with any work involving the employment of employees in a hazardous employment defined by this chapter, and notwithstanding any general or special statute requiring or authorizing the issue of such permits, shall not issue such permit unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that compensation for all employees has been secured as provided by this chapter. Nothing herein, however, shall be construed as creating any liability on the part of such state or municipal department, board, commission or office to pay any compensation to any such employee if so employed.

2. The head of a state or municipal department, board, commission or office authorized or required by law to enter into any contract for or in connection with any work involving the employment of employees in a hazardous employment defined by this chapter, notwithstanding any general or special statute requiring or authorizing any such contract, shall not enter into any such contract unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that compensation for all employees has been secured as provided by this chapter.

NEW YORK STATE | Workers' Compensation Board

CERTIFICATE OF INSURANCE COVERAGE UNDER THE NYS DISABILITY BENEFITS LAW

PART 1. To be completed by Disability Benefits Carrier or Licensed Insurance Agent of that Carrier

1a. Legal Name & Address of Insured (use street address only)

Northeast Remsco Construction, Inc.
1433 Highway 34 South- B-1

Farmingdale, NJ 07727

Work Location of Insured *(Only required if coverage is specifically limited to certain locations in New York State, i.e., a Wrap-Up Policy)*

1b. Business Telephone Number of Insured

(732) 557-6100 x

1c. NYS Unemployment Insurance Employer Registration Number of Insured

Pending

1d. Federal Employer Identification Number of Insured or Social Security Number

22-3131714

2. Name and Address of Entity Requesting Proof of Coverage (Entity Being Listed as the Certificate Holder)

New York City Department of Design & Construction

30-30 Thomson Avenue
Long Island City, NY 11101

3a. Name of Insurance Carrier

Standard Security Life Insurance Company of New York

3b. Policy Number of Entity Listed in Box "1a"

R91060-001

3c. Policy effective period

1/1/2017 to 1/2/2018

4. Policy covers:

☒ A. All of the employer's employees eligible under the New York Disability Benefits Law
☐ B. Only the following class or classes of employer's employees:

Under penalty of perjury, I certify that I am an authorized representative or licensed agent of the insurance carrier referenced above and that the named insured has NYS Disability Benefits insurance coverage as described above.

Date Signed 1/3/2017 By _____
(Signature of insurance carrier's authorized representative or NYS Licensed Insurance Agent of that insurance carrier)

Telephone Number 516-482-2696 Title Chief Operating Officer

IMPORTANT: If Box "4a" is checked, and this form is signed by the insurance carrier's authorized representative or NYS Licensed Insurance Agent of that carrier, this certificate is COMPLETE. Mail it directly to the certificate holder.
If Box "4b" is checked, this certificate is NOT COMPLETE for purposes of Section 220, Subd. 8 of the Disability Benefits Law. It must be mailed for completion to the Workers' Compensation Board, DB Plans Acceptance Unit, 328 State Street, Schenectady, NY 12305

PART 2. To be completed by the NYS Workers' Compensation Board (Only if Box "4b" of Part 1 has been checked)

State of New York
Workers' Compensation Board

According to information maintained by the NYS Workers' Compensation Board, the above-named employer has complied with the NYS Disability Benefits Law with respect to all of his/her employees.

Date Signed _____ By _____
(Signature of NYS Workers' Compensation Board Employee)

Telephone Number _____ Title _____

Please Note: *Only insurance carriers licensed to write NYS disability benefits insurance policies and NYS licensed insurance agents of those insurance carriers are authorized to issue Form DB-120.1.* ***Insurance brokers are NOT authorized to issue this form.***

DB-120.1 (9-15)

Additional Instructions for Form DB-120.1

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

Will the carrier notify the certificate holder within 10 days of a policy being cancelled for non-payment of premium or within 30 days if cancelled for any other reason or if the insured is otherwise eliminated from the coverage indicated on this certificate prior to the end of the policy effective period? ☐ YES ☒ NO

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policy listed, nor does it confer any rights or responsibilities beyond those contained in the referenced policy.

This certificate may be used as evidence of a Disability Benefits contract of insurance only while the underlying policy is in effect.

Please Note: Upon the cancellation of the disability benefits policy indicated on this form, if the business continues to be named on a permit, license or contract issued by a certificate holder, the business must provide that certificate holder with a new Certificate of NYS Disability Benefits Coverage or other authorized proof that the business is complying with the mandatory coverage requirements of the New York State Disability Benefits Law.

DISABILITY BENEFITS LAW

§220. Subd. 8

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

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

REVISED

EVIDENCE OF COMMERCIAL PROPERTY INSURANCE

DATE (MM/DD/YYYY): 11/17/2017

THIS EVIDENCE OF COMMERCIAL PROPERTY INSURANCE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE ADDITIONAL INTEREST NAMED BELOW. THIS EVIDENCE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS EVIDENCE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE ADDITIONAL INTEREST.

PRODUCER NAME, CONTACT PERSON AND ADDRESS	PHONE (A/C, No, Ext): (973) 890-0900	COMPANY NAME AND ADDRESS	NAIC NO:
C&H AGENCY 783 Riverview Drive P.O. Box 324 Totowa NJ 07511	FAX (A/C, No): (973) 812-9860 E-MAIL ADDRESS:	Travelers Property Casualty Co. of America One Tower Square Hartford CT 06183 IF MULTIPLE COMPANIES, COMPLETE SEPARATE FORM FOR EACH	
CODE: XF503	SUB CODE:	POLICY TYPE: Commercial Property	
AGENCY CUSTOMER ID #: 00000652			
NAMED INSURED AND ADDRESS Northeast Remsco Construction, Inc. 1433 Highway 34 South, B1 Farmingdale NJ 07727		LOAN NUMBER	POLICY NUMBER: QT6604279B547
		EFFECTIVE DATE: 4/1/2017	EXPIRATION DATE: 4/1/2018 — ☐ CONTINUED UNTIL TERMINATED IF CHECKED
ADDITIONAL NAMED INSURED(S)		THIS REPLACES PRIOR EVIDENCE DATED:	

PROPERTY INFORMATION (Use REMARKS on page 2, if more space is required) ☐ BUILDING OR ☐ BUSINESS PERSONAL PROPERTY

LOCATION / DESCRIPTION:
FMS ID No: HED-564, E-PIN No: 85017B0068001, DDC PIN No. 8502017WM0014C - New 20" Sub-Aqueous Water Main to City Island - Borough of the Bronx.

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS EVIDENCE OF PROPERTY INSURANCE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

COVERAGE INFORMATION PERILS INSURED: ☐ BASIC ☐ BROAD ☒ SPECIAL ☐

COMMERCIAL PROPERTY COVERAGE AMOUNT OF INSURANCE: $ 40,000 DED: 5,000

	YES	NO	N/A	
☐ BUSINESS INCOME ☐ RENTAL VALUE			X	If YES, LIMIT: ☐ Actual Loss Sustained; # of months:
BLANKET COVERAGE			X	If YES, indicate value(s) reported on property identified above: $
TERRORISM COVERAGE		X		Attach Disclosure Notice / DEC
IS THERE A TERRORISM-SPECIFIC EXCLUSION?	X			
IS DOMESTIC TERRORISM EXCLUDED?	X			
LIMITED FUNGUS COVERAGE			X	If YES, LIMIT: DED:
FUNGUS EXCLUSION (If "YES", specify organization's form used)			X	
REPLACEMENT COST	X			
AGREED VALUE		X		
COINSURANCE	X			If YES, 80 %
EQUIPMENT BREAKDOWN (If Applicable)			X	If YES, LIMIT: DED:
ORDINANCE OR LAW - Coverage for loss to undamaged portion of bldg			X	If YES, LIMIT: DED:
- Demolition Costs				If YES, LIMIT: DED:
- Incr. Cost of Construction				If YES, LIMIT: DED:
EARTH MOVEMENT (If Applicable)	X			If YES, LIMIT: DED:
FLOOD (If Applicable)		X		If YES, LIMIT: DED:
WIND / HAIL INCL ☒ YES ☐ NO Subject to Different Provisions:				If YES, LIMIT: DED:
NAMED STORM INCL ☒ YES ☐ NO Subject to Different Provisions:				If YES, LIMIT: DED:
PERMISSION TO WAIVE SUBROGATION IN FAVOR OF MORTGAGE HOLDER PRIOR TO LOSS			X	

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

ADDITIONAL INTEREST

☐	MORTGAGEE	☐	CONTRACT OF SALE
☐	LENDERS LOSS PAYABLE	X	Loss payee

NAME AND ADDRESS:
New York City Department of Design & Construction
30-30 Thomson Avenue
Long Island City, NY 11101

LENDER SERVICING AGENT NAME AND ADDRESS:

AUTHORIZED REPRESENTATIVE: Jean Walicky

© 2003-2014 ACORD CORPORATION. All rights reserved.
The ACORD name and logo are registered marks of ACORD

ACORD 28 (2014/01)
INS028 (201401)

Performance Bond #2 (Pages 96 to 99): Use if the total contract price is more than $5 Million.

PERFORMANCE BOND #2

KNOW ALL PERSONS BY THESE PRESENTS:,
That we, _____

_____

_____

hereinafter referred to as the "Principal,"
and, _____

_____

_____

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

_____

_____

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

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

_____

_____

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

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns, shall well and faithfully perform the said Contract and all modifications, amendments, additions and alterations thereto that may hereafter be made, according to its terms and its true intent and meaning, including repair and or replacement of defective work and guarantees of maintenance for the periods stated in the Contract, and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of the Principal's default of the Contract, and shall fully reimburse and repay the City for all outlay and expense which the City may incur in making

Performance Bond #2 (Pages 96 to 99): Use if the total contract price is more than $5 Million.

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 96 to 99): Use if the total contract price is more than $5 Million.

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

_____ day of _____ 20 _____.

(Seal)

_____(L.S.)
Principal

By:_____.

(Seal)

Surety

By:_____.
_____.

(Seal)

Surety

By:_____.
_____.

(Seal)

Surety

By:_____.
_____.

(Seal)

Surety

By:_____.
_____.

(Seal)

Surety

By:_____.

Bond Premium Rate _____.

Bond Premium Cost _____.

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

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

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

Performance Bond #2 (Pages 96 to 99): Use if the total contract price is more than $5 Million.

ACKNOWLEDGMENT OF PRINCIPAL IF A CORPORATION

State of _____ County of _____ ss:

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

_____
Notary Public or Commissioner of Deeds.

ACKNOWLEDGMENT OF PRINCIPAL IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____, 20 _____ before me personally came _____,
to me known, who, being by me duly sworn did depose and say that he/she resides at _____

_____; that he/she is _____ partner of _____, a limited/general partnership existing under the laws of the State of _____, the partnership described in and which executed the foregoing instrument; and that he/she signed his/her name to the foregoing instrument as the duly authorized and binding act of said partnership.

_____
Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL IF AN INDIVIDUAL

State of _____ County of _____ ss:

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

_____
Notary Public or Commissioner of Deeds

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

* * * * * * * *

Affix Acknowledgments and Justification of Sureties.

Payment Bond (Pages 100 to 103): Use for any contract for which a Payment Bond is required.

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 engaged who perform the work of laborers or mechanics at or in the vicinity of the site

Payment Bond (Pages 100 to 103): Use for any contract for which a Payment Bond is required.

of the Project regardless of any contractual relationship between the Principal or such Subcontractors, or his or their successors or assigns, on the one hand and such laborers or mechanics on the other, but not including office employees not regularly stationed at the site of the project; and

(b) Materials and supplies (whether incorporated in the permanent structure or not), as well as teams, fuels, oils, implements or machinery furnished, used or consumed by said Principal or any subcontractor at or in the vicinity of the site of the Project in the prosecution of the Work under said Contract and any amendment or extension thereof or addition thereto; then this obligation shall be void, otherwise to remain in full force and effect.

This bond is subject to the following additional conditions, limitations and agreements:

(a) The Principal and Surety (Sureties) agree that this bond shall be for the benefit of any materialmen or laborer having a just claim, as well as the City itself.

(b) All persons who have performed labor, rendered services or furnished materials and supplies, as aforesaid, shall have a direct right of action against the Principal and his, its or their successors and assigns, and the Surety (Sureties) herein, or against either or both or any of them and their successors and assigns. Such persons may sue in their own name, and may prosecute the suit to judgment and execution without the necessity of joining with any other persons as party plaintiff.

(c) The Principal and Surety (Sureties) agree that neither of them will hold the City liable for any judgment for costs of otherwise, obtained by either or both of them against a laborer or materialman in a suit brought by either a laborer or materialman under this bond for moneys allegedly due for performing work or furnishing material.

(d) The Surety (Sureties) or its successors and assigns shall not be liable for any compensation recoverable by an employee or laborer under the Workmen's Compensation Law.

(e) In no event shall the Surety (Sureties), or its successors or assigns, be liable for a greater sum than the penalty of this bond or be subject to any suit, action or proceeding hereon that is instituted by any person, firm, or corporation hereunder later than two years after the complete performance of said Contract and final settlement thereof.

The Principal, for himself and his successors and assigns, and the Surety (Sureties), for itself and its successors and assigns, do hereby expressly waive any objection that might be interposed as to the right of the City to require a bond containing the foregoing provisions, and they do hereby further expressly waive any defense which they or either of them might interpose to an action brought hereon by any person, firm or corporation, including subcontractors, materialmen and third persons, for work, labor, services, supplies or material performed rendered, or furnished as aforesaid upon the ground that there is no law authorizing the City to require the foregoing provisions to be place in this bond.

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

Payment Bond (Pages 100 to 103): Use for any contract for which a Payment Bond is required.

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:_____

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 100 to 103): Use for any contract for which a Payment Bond is required.

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.

(NO TEXT ON THIS PAGE)

SCHEDULE OF WORKMEN, MECHANICS AND LABORERS

The following is a list of classifications for workmen, mechanics and laborers which are anticipated to be employed in the performance of work under this contract, followed by a schedule of the prevailing wage rates and supplemental benefits for all classifications as established by the Comptroller of the City of New York.

Request for interpretation or correction under Subsection A of Section No. 3 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 classification of trades required to be used at the time of the award of 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.

CODE	CLASSIFICATION
15 42 001	Rigger
15 42 002	Sign Erector
16 11 001	Gardener
16 11 002	Tree Pruner
16 11 003	Tree Remover
16 11 011	Asphalt Raker (Highway & Paving)
16 11 012	Tamper (Highway & Paving)
16 11 013	Curbsetter (Highway & Paving)
16 11 014	Formsetter (Highway & Paving)
16 11 015	Rammerman (Highway & Paving)
16 11 016	Laborer (Highway & Paving)
16 11 017	ALL OTHER TITLES (Highway & Paving)
16 23 001	Laborer
16 23 002	Operating Engineer (Heavy Construction-Maintenance)
16 23 003	Junior Operating Engineer
16 23 004	Junior Operating Engineer
16 23 005	Junior Operating Engineer
16 23 006	Fireman (Heavy Construction)
16 23 007	Oiler (Heavy Construction)
16 23 051	Surveyor-Heavy Construction
16 23 052	Surveyor-Heavy Construction-Instrument Man
16 23 053	Surveyor-Heavy Construction-Rodman
16 23 057	Surveyor-Land Surveying-Party Chief
16 23 058	Surveyor-Land Surveying-Instrument Man
16 23 059	Surveyor-Land Surveying-Rodman

CODE	CLASSIFICATION
16 23 061	Operating Engineer-Road & Heavy Construction
16 23 062	Operating Engineer-Paving
16 23 063	Operating Engineer-Concrete
16 23 071	Teamster-Heavy Equipment Trailer Driver
16 23 072	Teamster-Dump Truck Driver
16 23 073	Teamster-Flat Bed Trailer Driver (3-Axle)
16 23 074	Teamster-Redi-Mix (Sand and Gravel)
16 29 011	Drill Runners
17 11 001	Plumbers
17 21 001	Painter (Brush & Roller)
17 31 001	Electrician
17 41 001	Bricklayer
17 41 002	Mason Tender
17 41 004	Cement Mason
17 42 002	Metallic Lather
17 51 001	Carpenter
17 51 002	Dock Builder
17 71 001	Cement & Concrete Worker
17 91 001	Structural Iron Worker
17 95 001	Barman
17 96 021	Derrickmen & Riggers
17 99 001	Ornamental Iron Worker
17 99 002	Sandblaster
17 99 005	Pointers (Waterproofer)
17 99 011	Welders

Each classification may include trainees depending upon project staffing schedules and as required by the terms of this contract.

LABOR LAW §220 PREVAILING WAGE SCHEDULE

Workers, Laborers and Mechanics employed on a public work project must receive not less than the prevailing rate of wage and benefits for the classification of work performed by each upon such public work. Pursuant to Labor Law §220 the Comptroller of the City of New York has promulgated this schedule solely for Workers, Laborers and Mechanics engaged by private contractors on New York City public work contracts.

This schedule is a compilation of separate determinations of the prevailing rate of wage and supplements made by the Comptroller for each trade classification listed herein pursuant to New York State Labor Law section 220 (5). The source of the wage and supplement rates, whether a collective bargaining agreement, survey data or other, is listed at the end of each classification.

Agency Chief Contracting Officers should contact the Bureau of Labor Law's Classification Unit with any questions concerning trade classifications, prevailing rates or prevailing practices with respect to procurement on New York City public works contracts. Contractors are advised to review the Comptroller's Prevailing Wage Schedule before bidding on public works contracts. Contractors with questions concerning trade classifications, prevailing rates or prevailing practices with respect to public works contracts in the procurement stage must contact the contracting agency responsible for the procurement.

Any error as to compensation under the prevailing wage law or other information as to trade classification, made by the contracting agency in the contract documents or in any other communication, will not preclude a finding against the contractor of prevailing wage violation.

Any questions concerning trade classifications, prevailing rates or prevailing practices on New York City public works contracts that have already been awarded may be directed to the Bureau of Labor Law's Classification Unit by calling (212) 669-7974. All callers must have the agency name and contract registration number available when calling with questions on public works contracts. Please direct all other compliance issues to: Bureau of Labor Law, Attn: Wasyl Kinach, P.E., Office of the Comptroller, 1 Centre Street, Room 1122, New York, N.Y. 10007; Fax (212) 669-4002.

The appropriate schedule of prevailing wages and benefits must be posted at all public work sites pursuant to Labor Law §220 (3-a) (a).

This schedule is applicable to work performed during the effective period, unless otherwise noted. Changes to this schedule are published on our web site www.comptroller.nyc.gov. Contractors must pay the wages and supplements in effect when the worker, laborer, mechanic performs the work. Preliminary schedules for future one-year periods appear in the City Record on or about June 1 each succeeding year. Final schedules appear on or about July 1 in the City Record and on our web site www.comptroller.nyc.gov.

The Comptroller's Office has attempted to include all overtime, shift and night differential, Holiday, Saturday, Sunday or other premium time work. However, this schedule does not set forth every prevailing practice with respect to such rates with which employers must comply. All such practices are nevertheless part of the employer's prevailing wage obligation and contained in the collective bargaining agreements of the prevailing wage unions. These collective bargaining agreements are available for inspection by appointment. Requests for appointments may be made by calling (212) 669-4443, Monday through Friday between the hours of 9 a.m. and 5 p.m.

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

Prevailing rates and ratios for apprentices are attached to this schedule in the Appendix. Pursuant to Labor Law §220 (3-e), only apprentices who are individually registered in a bona fide program to which the employer contractor is a participant, registered with the New York State Department of Labor, may be employed on a public work project. Workers who are not journey persons or not registered apprentices pursuant to Labor Law §220 (3-e) may not be substituted for apprentices and must be paid as journey persons.

Public Work construction, reconstruction, demolition, excavation, rehabilitation, repair, renovation, alteration, or improvement contracts awarded pursuant to a Project Labor Agreement ("PLA") in accordance with Labor Law section 222 may have different labor standards for shift, premium and overtime work. Please refer to the PLA's pre-negotiated labor agreements for wage and benefit rates applicable to work performed outside of the regular workday. More information is available at the Mayor's Office of Contract Services (MOCS) web page at http://www.nyc.gov/html/mocs/html/vendors/pla.shtml.

All the provisions of Labor Law section 220 remain applicable to PLA work including, but not limited to, the enforcement of prevailing wage requirements by the Comptroller; however, we will enforce shift, premium, overtime and other non-standard rates as they appear in a project's pre-negotiated labor agreement.

In order to meet their obligation to provide prevailing supplemental benefits to each covered employee, employers must either:

1) Provide bona-fide 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.

Wasyl Kinach, P.E.
Director of Classifications
Bureau of Labor Law

TABLE OF CONTENTS

CLASSIFICATION	PAGE
ASBESTOS HANDLER	5
BLASTER	5
BOILERMAKER	7
BRICKLAYER	8
CARPENTER - BUILDING COMMERCIAL	9
CARPENTER - HEAVY CONSTRUCTION WORK	10
CARPENTER - SIDEWALK SHED, SCAFFOLD AND HOIST	11
CEMENT & CONCRETE WORKER	12
CEMENT MASON	13
CORE DRILLER	14
DERRICKPERSON AND RIGGER	15
DIVER	16
DOCKBUILDER - PILE DRIVER	17
DRIVER: TRUCK (TEAMSTER)	17
ELECTRICIAN	20
ELECTRICIAN - ALARM TECHNICIAN	23
ELECTRICIAN-STREET LIGHTING WORKER	24
ELEVATOR CONSTRUCTOR	26
ELEVATOR REPAIR & MAINTENANCE	27
ENGINEER	28
ENGINEER - CITY SURVEYOR AND CONSULTANT	32
ENGINEER - FIELD (BUILDING CONSTRUCTION)	33
ENGINEER - FIELD (HEAVY CONSTRUCTION)	34
ENGINEER - FIELD (STEEL ERECTION)	35
ENGINEER - OPERATING	36
FLOOR COVERER	44
GLAZIER	45
GLAZIER - REPAIR & MAINTENANCE	46
HEAT AND FROST INSULATOR	47
HOUSE WRECKER	48
IRON WORKER - ORNAMENTAL	49
IRON WORKER - STRUCTURAL	50
LABORER	50

LANDSCAPING 51
MARBLE MECHANIC 53
MASON TENDER 54
MASON TENDER (INTERIOR DEMOLITION WORKER) 55
METALLIC LATHER 56
MILLWRIGHT 57
MOSAIC MECHANIC 58
PAINTER 59
PAINTER - METAL POLISHER 60
PAINTER - STRIPER 61
PAINTER - STRUCTURAL STEEL 62
PAPERHANGER 63
PAVER AND ROADBUILDER 64
PLASTERER 65
PLASTERER - TENDER 66
PLUMBER 67
PLUMBER (MECHNICAL EQUIPMENT AND SERVICE) 68
PLUMBER (RESIDENTIAL RATES FOR 1, 2 AND 3 FAMILY HOME CONSTRUCTION) 69
PLUMBER: PUMP & TANK 70
POINTER, WATERPROOFER, CAULKER, SANDBLASTER, STEAMBLASTER 70
ROOFER 71
SHEET METAL WORKER 72
SHEET METAL WORKER - SPECIALTY 73
SHIPYARD WORKER 74
SIGN ERECTOR 75
STEAMFITTER 76
STEAMFITTER - REFRIGERATION AND AIR CONDITIONER 78
STONE MASON - SETTER 80
TAPER 81
TELECOMMUNICATION WORKER 81
TILE FINISHER 83
TILE LAYER - SETTER 83
TIMBERPERSON 84
TUNNEL WORKER 85
WELDER 87

ASBESTOS HANDLER
(Hazardous Material; Disturbs, removes, encapsulates, repairs, or encloses friable asbestos material)

Asbestos Handler

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $36.00
Supplemental Benefit Rate per Hour: $16.45

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Sunday.
Time and one half the regular hourly rate after 40 hours in any work week.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day
Easter

Paid Holidays
None

(Local #78 and Local #12A)

BLASTER

Blaster

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $44.93
Supplemental Benefit Rate per Hour: $46.24

Blaster (Hydraulic)

Effective Period: 7/1/2016 - 6/30/2017

Wage Rate per Hour: $45.78
Supplemental Benefit Rate per Hour: $46.24

Blaster - Trac Drill Hydraulic

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $40.12
Supplemental Benefit Rate per Hour: $46.24

Blaster - Wagon: Air Trac: Quarry Bar: Drillrunners

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $39.31
Supplemental Benefit Rate per Hour: $46.24

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $38.23
Supplemental Benefit Rate per Hour: $46.24

Blaster - Powder Carriers

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $34.20
Supplemental Benefit Rate per Hour: $46.24

Blaster - Hydraulic Trac Drill Chuck Tender

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $32.88
Supplemental Benefit Rate per Hour: $46.24

Blaster - Chuck Tender & Nipper

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $32.10
Supplemental Benefit Rate per Hour: $46.24

Blaster - Magazine Keepers: (Watch Person)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $17.80
Supplemental Benefit Rate per Hour: $46.24

Overtime Description

Magazine Keepers:
Time and one half for work performed in excess of forty (40) hours per week and for work performed on Saturdays, Sundays and Holidays.

All Other Employees:
Time and one-half for the first two hours of overtime Monday through Friday, the first ten hours, the first ten hours of work on Saturday and for Make-up Time. Double time for all hours over ten Monday through Saturday (except make-up hours) and for all hours worked on Sunday and Holidays.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
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: 7/1/2016 - 12/31/2016
Wage Rate per Hour: $53.36
Supplemental Benefit Rate per Hour: $42.33
Supplemental Note: For time and one half overtime - $62.88 For double overtime - $83.42

Effective Period: 1/1/2017 - 6/30/2017
Wage Rate per Hour: $55.23
Supplemental Benefit Rate per Hour: $42.96
Supplemental Note: For time and one half overtime - $63.82 For double overtime - $84.68

Overtime Description

For Repair and Maintenance work:
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
For New Construction work:
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

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

Paid Holidays

Good Friday
Day after Thanksgiving
Day before Christmas
Day before New Year's Day

Shift Rates

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

(Local #5)

BRICKLAYER

Bricklayer

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $52.59

Supplemental Benefit Rate per Hour: $30.00

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.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Overtime rates to be paid outside the regular scheduled work day.

(Bricklayer District Council)

CARPENTER - BUILDING COMMERCIAL

Building Commercial

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $52.50
Supplemental Benefit Rate per Hour: $46.28

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $51.63
Supplemental Benefit Rate per Hour: $48.65

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate.

(Carpenters District Council)

CARPENTER - SIDEWALK SHED, SCAFFOLD AND HOIST

Carpenter - Hod Hoist

(Assisted by Mason Tender)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $50.50
Supplemental Benefit Rate per Hour: $44.80

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates

The second shift will receive 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)

CEMENT & CONCRETE WORKER

Cement & Concrete Worker

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $42.48
Supplemental Benefit Rate per Hour: $23.00
Supplemental Note: $25.75 on Saturdays; $28.50 on Sundays & Holidays

Cement & Concrete Worker - (Hired after 2/6/2016)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $32.00
Supplemental Benefit Rate per Hour: $16.00
Supplemental Note: $17.25 on Saturdays; $18.50 on Sundays & Holidays

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

Overtime
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day before Christmas Day

1/2 day before New Year's Day

Shift Rates
On shift work extending over a twenty-four hour period, all shifts are paid at straight time.

(Cement Concrete Workers District Council)

CEMENT MASON

Cement Mason

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $40.72
Supplemental Benefit Rate per Hour: $38.96
Supplemental Note: For time and one half overtime - $48.21; For double overtime - $57.46

Overtime Description
Time and one-half the regular rate after an 8 hour day, double time the regular rate after 10 hours. Time and one-half the regular rate on Saturday, double time the regular rate after 10 hours. Double time the regular rate on Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
Any worker who reports to work on Christmas Eve or New Year's Eve pursuant to his employer's instruction shall be entitled to three (3) hours afternoon pay without working.

Shift Rates
For an off shift day, (work at times other than the regular 7:00 A.M. to 3:30 P.M. work day) a cement mason shall be paid at the regular hourly rate plus a 25% per hour differential. Four Days a week at Ten (10)hour day.

(Local #780) (BCA)

CORE DRILLER

Core Driller

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $37.82
Supplemental Benefit Rate per Hour: $24.00

Core Driller Helper

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $30.17
Supplemental Benefit Rate per Hour: $24.00

Core Driller Helper(Third year in the industry)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $27.15
Supplemental Benefit Rate per Hour: $24.00

Core Driller Helper (Second year in the industry)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $24.14
Supplemental Benefit Rate per Hour: $24.00

Core Driller Helper (First year in the industry)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $21.12
Supplemental Benefit Rate per Hour: $24.00

Overtime Description

Time and one half the regular rate for work on a holiday plus Holiday pay when worked.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Memorial Day
Independence Day
Labor Day

Thanksgiving Day
Christmas Day

Shift Rates

The shift day shall be the continuous eight and one-half (8½) hours from 6:00 A.M. to 2:30 P.M. and from 2:30 P.M. to 11:00 P.M., including one-half (½) hour of employees regular rate of pay for lunch. When two (2) or more shifts are employed, single time shall be paid for each shift, but those employees employed on a shift other than from 8:00 A.M. to 5:00 P.M. shall, in addition, receive seventy-five cents ($0.75) per hour differential for each hour worked. When three (3) shifts are needed, each shift shall work seven and one-half (7 ½) hours paid for eight (8) hours of labor and be permitted one-half (½) hour for mealtime.

(Carpenters District Council)

DERRICKPERSON AND RIGGER

Derrick Person & Rigger

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $45.48
Supplemental Benefit Rate per Hour: $50.00
Supplemental Note: The above supplemental rate applies for work performed in Manhattan, Bronx, Brooklyn and Queens. $51.42 - For work performed in Staten Island.

Overtime Description

The first two hours of overtime on weekdays and the first seven hours of work on Saturdays are paid at time and one half for wages and supplemental benefits. All additional overtimes is paid at double time for wages and supplemental benefits. Deduct $1.42 from the Staten Island hourly benefits rate before computing overtime.

Overtime

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

(Local #197)

DIVER

Diver (Marine)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $65.38
Supplemental Benefit Rate per Hour: $48.65

Diver Tender (Marine)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $46.44
Supplemental Benefit Rate per Hour: $48.65

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
When three shifts are utilized each shift shall work seven and one half-hours (7 1/2 hours) and paid for 8 hours, allowing for one half hour for lunch.

(Carpenters District Council)

DOCKBUILDER - PILE DRIVER

Dockbuilder - Pile Driver

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $51.63
Supplemental Benefit Rate per Hour: $48.65

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate.

(Carpenters District Council)

DRIVER: TRUCK (TEAMSTER)

Driver - Dump Truck

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $40.15
Supplemental Benefit Rate per Hour: $43.39
Supplemental Note: Over 40 hours worked: at time and one half rate - $18.44; at double time rate - $24.58

Driver - Tractor Trailer

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $41.46
Supplemental Benefit Rate per Hour: $43.65
Supplemental Note: Over 40 hours worked: at time and one half rate - $16.65; at double time rate - $22.20

Driver - Euclid & Turnapull Operator

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $42.03
Supplemental Benefit Rate per Hour: $43.65
Supplemental Note: Over 40 hours worked: at time and one half rate - $16.65; at double time rate - $22.20

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

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

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

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

Shift Rates
Off single shift work commencing between 6:00 P.M. and 5:00 A.M. shall work eight and one half hours allowing for one half hour for lunch and receive 9 hours pay for 8 hours of work.

Driver Redi-Mix (Sand & Gravel)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $36.30
Supplemental Benefit Rate per Hour: $40.02
Supplemental Note: Over 40 hours worked: time and one half rate $13.90, double time rate $18.53

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

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

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
President's Day
Columbus Day
Veteran's Day

Triple time the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Thanksgiving Day
Christmas Day

(Local #282)

ELECTRICIAN

(Including all low voltage cabling carrying data; video; and voice in combination with data and or video.)

Electrician "A" (Regular Day)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $54.00
Supplemental Benefit Rate per Hour: $51.86

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $56.00
Supplemental Benefit Rate per Hour: $54.35

Electrician "A" (Regular Day Overtime)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $81.00
Supplemental Benefit Rate per Hour: $55.24

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $84.00
Supplemental Benefit Rate per Hour: $57.86

Electrician "A" (Day Shift)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $54.00
Supplemental Benefit Rate per Hour: $51.86

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $56.00
Supplemental Benefit Rate per Hour: $54.35

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

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $81.00
Supplemental Benefit Rate per Hour: $55.24

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $84.00
Supplemental Benefit Rate per Hour: $57.86

Electrician "A" (Swing Shift)

Effective Period: 7/1/2016 - 5/10/2017

Wage Rate per Hour: $63.36
Supplemental Benefit Rate per Hour: $59.01

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $65.71
Supplemental Benefit Rate per Hour: $61.94

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

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $95.04
Supplemental Benefit Rate per Hour: $62.98

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $98.57
Supplemental Benefit Rate per Hour: $66.05

Electrician "A" (Graveyard Shift)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $70.97
Supplemental Benefit Rate per Hour: $65.05

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $73.60
Supplemental Benefit Rate per Hour: $68.33

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

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $106.46
Supplemental Benefit Rate per Hour: $69.50

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $110.40
Supplemental Benefit Rate per Hour: $72.95

Overtime

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on a holiday.
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day

Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

Shift Rates

When so elected by the Employer, one or more shifts of at least five days duration may be scheduled as follows: Day Shift: 8:00 am to 4:30 pm, Swing Shift 4:30 pm to 12:30 am, Graveyard Shift: 12:30 am to 8:00 am.

For multiple shifts of temporary light and/or power, the temporary light and/or power employee shall be paid for 8 hours at the straight time rate. For three or less workers performing 8 hours temporary light and/or power the supplemental benefit rate is $25.14 and effective 5/11/17 $25.67.

Electrician "M" (First 8 hours)

"M" rated work shall be defined as jobbing: electrical work of limited duration and scope, also consisting of repairs and/or replacement of electrical and tele-data equipment. Includes all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $28.00
Supplemental Benefit Rate per Hour: $21.85
First and Second Year "M" Wage Rate Per Hour: $23.50
First and Second Year "M" Supplemental Rate: $19.54

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $28.50
Supplemental Benefit Rate per Hour: $22.10
First and Second Year "M" Wage Rate Per Hour: $24.00
First and Second Year "M" Supplemental Rate: $19.80

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: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $42.00
Supplemental Benefit Rate per Hour: $23.60
First and Second Year "M" Wage Rate Per Hour: $35.25
First and Second Year "M" Supplemental Rate: $21.01

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $42.75
Supplemental Benefit Rate per Hour: $23.89
First and Second Year "M" Wage Rate Per Hour: $36.00
First and Second Year "M" Supplemental Rate: $21.30

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

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

(Local #3)

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

Alarm Technician

Effective Period: 7/1/2016 - 3/9/2017
Wage Rate per Hour: $32.00
Supplemental Benefit Rate per Hour: $15.47
Supplemental Note: $13.97 only after 8 hours worked in a day

Effective Period: 3/10/2017 - 6/30/2017
Wage Rate per Hour: $32.40
Supplemental Benefit Rate per Hour: $16.10

Supplemental Note: $14.60 only after 8 hours worked in a day

Overtime Description

Time and one half the regular rate for work on the following holidays: Columbus Day, Veterans Day, Day after Thanksgiving.
Double time the regular rate for work on the following holidays: New Year's day, Martin Luther King Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day.

Overtime

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

Paid Holidays

New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Night Differential is based upon a ten percent (10%) differential between the hours of 4:00 P.M. and 12:30 A.M. and a fifteen percent (15%) differential for the hours 12:00 A.M. to 8:00 A.M.

Vacation

At least 1 year of employment.....ten (10) days
5 years or more of employment.....fifteen (15) days
10 years of employment.....twenty (20) days
Plus one Personal Day per year

Sick Days:
One day per Year. Up to 4 vacation days may be used as sick days.

(Local #3)

ELECTRICIAN-STREET LIGHTING WORKER

Electrician - Electro Pole Electrician

Effective Period: 7/1/2016 - 5/17/2017
Wage Rate per Hour: $54.00
Supplemental Benefit Rate per Hour: $53.69

Effective Period: 5/18/2017 - 6/30/2017
Wage Rate per Hour: $56.00
Supplemental Benefit Rate per Hour: $56.26

Electrician - Electro Pole Foundation Installer

Effective Period: 7/1/2016 - 5/17/2017
Wage Rate per Hour: $40.93
Supplemental Benefit Rate per Hour: $40.12

Effective Period: 5/18/2017 - 6/30/2017
Wage Rate per Hour: $41.54
Supplemental Benefit Rate per Hour: $41.02

Electrician - Electro Pole Maintainer

Effective Period: 7/1/2016 - 5/17/2017
Wage Rate per Hour: $35.05
Supplemental Benefit Rate per Hour: $36.11

Effective Period: 5/18/2017 - 6/30/2017
Wage Rate per Hour: $35.58
Supplemental Benefit Rate per Hour: $36.89

Overtime Description

Electrician - Electro Pole Electrician: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week.
Electrician - Electro Pole Foundation Installer: Time and one half the regular rate after 8 hours within a 24 hour period and Saturday and Sunday.
Electrician - Electro Pole Maintainer: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week. Saturdays and Sundays may be used as a make-up day at straight time when a day is lost during the week to inclement weather.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

(Local #3)

ELEVATOR CONSTRUCTOR

Elevator Constructor

Effective Period: 7/1/2016 - 3/16/2017
Wage Rate per Hour: $60.96
Supplemental Benefit Rate per Hour: $32.65

Effective Period: 3/17/2017 - 6/30/2017
Wage Rate per Hour: $62.64
Supplemental Benefit Rate per Hour: $34.25

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)

ELEVATOR REPAIR & MAINTENANCE

Elevator Service/Modernization Mechanic

Effective Period: 7/1/2016 - 3/16/2017
Wage Rate per Hour: $47.91
Supplemental Benefit Rate per Hour: $32.51

Effective Period: 3/17/2017 - 6/30/2017
Wage Rate per Hour: $49.14
Supplemental Benefit Rate per Hour: $34.11

Overtime Description
For Scheduled Service Work: Double time - work scheduled in advance by two or more workers performed on Sundays, Holidays, and between midnight and 7:00am.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.
Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates
Afternoon shift - regularly hourly rate plus a (15%) fifteen percent differential. Graveyard shift - time and one half the regular rate.

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

(Local #1)

ENGINEER

Engineer - Heavy Construction Operating Engineer I

Cherrypickers 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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $65.94
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $105.50

Engineer - Heavy Construction Operating Engineer II

Backhoes, Basin Machines, Groover, Mechanical Sweepers, Bobcat, Boom Truck, Barrier Transport (Barrier Mover) & machines of similar nature. Operation of Churn Drills and machines of a similar nature, Stetco Silent Hoist and machines of similar nature, Vac-Alls, Meyers Machines, John Beam and machines of a similar nature, Ross Carriers and Travel Lifts and machines of a similar nature, Bulldozers, Scrapers and Turn-a-Pulls: Tugger Hoists (Used exclusively for handling excavated material); Tractors with attachments, Hyster and Roustabout Cranes, Cherrypickers. Austin Western, Grove and machines of a similar nature, Scoopmobiles, Monorails, Conveyors, Trenchers: Loaders-Rubber Tired and Tractor: Barber Greene and Eimco Loaders and Eimco Backhoes; Mighty Midget and similar breakers and Tampers, Curb and Gutter Pavers and Motor Patrol, Motor Graders and all machines of a similar nature. Locomotives 10 Tons or under. Mini-Max, Break-Tech and machines of a similar nature; Milling machines, robotic and demolition machines and machines of a similar nature, shot blaster, skid steer machines and machines of a similar nature including bobcat, pile rig rubber-tired excavator (37,000 lbs. and under), 2 man auger.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $63.98
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $102.37

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $60.69
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $97.10

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $63.68
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $101.89

Engineer - Heavy Construction Maintenance Engineer II

On Base Mounted Tower Cranes

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $83.66
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $133.86

Engineer - Heavy Construction Maintenance Engineer III

On Generators, Light Towers

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $42.01
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $67.22

Engineer - Heavy Construction Maintenance Engineer IV

On Pumps and Mixers including mud sucking

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $43.11
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $68.98

Engineer - Heavy Construction Oilers I

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

Effective Period: 7/1/2016 - 6/30/2017

Wage Rate per Hour: $57.42
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $91.87

Engineer - Heavy Construction Oilers II

All gasoline, electric, diesel or air operated Shovels, Draglines, Backhoes, Keystones, Pavers, Gunite Machines, Battery of Compressors, Crawler Cranes, two-person Trenching Machines.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $39.70
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $63.52

Engineer - Steel Erection Maintenance Engineers

Derrick, Travelers, Tower, Crawler Tower and Climbing Cranes

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $61.13
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $97.81

Engineer - Steel Erection Oiler I

On a Truck Crane

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $57.21
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $91.54

Engineer - Steel Erection Oiler II

On a Crawler Crane

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $43.54
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime
Shift Wage Rate: $69.66

Overtime Description

On jobs of more than one shift, if the next shift employee fails to report for work through any cause over which the employer has no control, the employee on duty who works the next shift continues to work at the single time rate.

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

---

Engineer - Building Work Maintenance Engineers I

Installing, repairing, maintaining, dismantling (of all equipment including: Steel Cutting and Bending Machines, Mechanical Heaters, Mine Hoists, Climbing Cranes, Tower Cranes, Linden Peine, Lorain, Liebherr, Mannes, or machines of a similar nature, Well Point Systems, Deep Well Pumps, Concrete Mixers with loading Device, Concrete Plants, Motor Generators when used for temporary power and lights), skid steer machines of a similar nature including bobcat.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $58.30
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime

Engineer - Building Work Maintenance Engineers II

On Pumps, Generators, Mixers and Heaters

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $45.28
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime

Engineer - Building Work Oilers I

All gasoline, electric, diesel or air operated Gradealls: Concrete Pumps, Overhead Cranes in Power Houses: Their duties shall be to assist the Engineer in oiling, greasing and repairing of all machines; Driving Truck Cranes: Driving and Operating Fuel and Grease Trucks, Cherrypickers (hydraulic cranes) over 70,000 GVW, and machines of a similar nature.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $55.42
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime

Engineer - Building Work Oilers II

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

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $41.16
Supplemental Benefit Rate per Hour: $35.41
Supplemental Note: $63.67 on overtime

Overtime Description
On jobs of more than one shift, if an Employee fails to report for work through any cause over which the Employer has no control, the Employee on duty will continue to work at the rate of single time.

Overtime
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Shift Rates
Off Shift: double time the regular hourly rate.

(Local #15)

ENGINEER - CITY SURVEYOR AND CONSULTANT

Party Chief

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $38.18
Supplemental Benefit Rate per Hour: $20.15
Supplemental Note: Overtime Benefit Rate - $27.65 per hour (time & one half) $35.15 per hour (double time).

Instrument Person

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $31.47
Supplemental Benefit Rate per Hour: $20.15
Supplemental Note: Overtime Benefit Rate - $27.65 per hour (time & one half) $35.15 per hour (double time).

Rodperson

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $27.24
Supplemental Benefit Rate per Hour: $20.15
Supplemental Note: Overtime Benefit Rate - $27.65 per hour (time & one half) $35.15 per hour (double time).

Overtime Description

Time and one half the regular rate after an 8 hour day, Time and one half the regular rate for Saturday for the first eight hours worked, Double time the regular time rate for Saturday for work performed in excess of eight hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (BUILDING CONSTRUCTION)
(Construction of Building Projects, Concrete Superstructures, etc.)

Field Engineer - BC Party Chief

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $60.10
Supplemental Benefit Rate per Hour: $32.15
Supplemental Note: Overtime Benefit Rate - $44.90 per hour (time & one half) $57.65 per hour (double time).

Field Engineer - BC Instrument Person

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $46.69
Supplemental Benefit Rate per Hour: $32.15
Supplemental Note: Overtime Benefit Rate - $44.90 per hour (time & one half) $57.65 per hour (double time).

Field Engineer - BC Rodperson

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $30.20
Supplemental Benefit Rate per Hour: $32.15
Supplemental Note: Overtime Benefit Rate - $44.90 per hour (time & one half) $57.65 per hour (double time).

Overtime Description
Time and one half the regular rate after a 7 hour work and time and one half the regular rate for Saturday for the first seven hours worked, Double time the regular time rate for Saturday for work performed in excess of seven hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (HEAVY CONSTRUCTION)
(Construction of Roads, Tunnels, Bridges, Sewers, Building Foundations, Engineering Structures etc.)

Field Engineer - HC Party Chief

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $68.09
Supplemental Benefit Rate per Hour: $33.54
Supplemental Note: Overtime benefit rate - $46.86 per hour (time & one half), $60.18 per hour (double time).

Field Engineer - HC Instrument Person

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $49.98
Supplemental Benefit Rate per Hour: $33.54
Supplemental Note: Overtime benefit rate - $46.86 per hour (time & one half), $60.18 per hour (double time).

Field Engineer - HC Rodperson

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $41.93
Supplemental Benefit Rate per Hour: $33.54
Supplemental Note: Overtime benefit rate - $46.86 per hour (time & one half), $60.18 per hour (double time).

Overtime Description

Time and one half the regular rate after an 8 hour day, Time and one half the regular rate for Saturday for the first eight hours worked, Double time the regular time rate for Saturday for work performed in excess of eight hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - FIELD (STEEL ERECTION)

Field Engineer - Steel Erection Party Chief

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $63.64
Supplemental Benefit Rate per Hour: $33.04
Supplemental Note: Overtime benefit rate - $46.11 per hour (time & one half), $59.18 per hour (double time).

Field Engineer - Steel Erection Instrument Person

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $49.59
Supplemental Benefit Rate per Hour: $33.04
Supplemental Note: Overtime benefit rate - $46.11 per hour (time & one half), $59.18 per hour (double time).

Field Engineer - Steel Erection Rodperson

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $33.20
Supplemental Benefit Rate per Hour: $33.04
Supplemental Note: Overtime benefit rate - $46.11 per hour (time & one half), $59.18 per hour (double time).

Overtime Description
Time and one half the regular rate for Saturday for the first eight hours worked.
Double time the regular rate for Saturday for work performed in excess of eight hours.

Overtime
Time and one half the regular rate after an 8 hour day.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - OPERATING

Operating Engineer - Road & Heavy Construction I

Back Filling Machines, Cranes, Mucking Machines and Dual Drum Paver.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $73.90
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $118.24

Operating Engineer - Road & Heavy Construction II

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

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $76.51
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $122.42

Operating Engineer - Road & Heavy Construction III

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

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $78.96
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $126.34

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $77.07
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $123.31

Operating Engineer - Road & Heavy Construction V

Pile Drivers & Rigs (employing Dock Builder foreperson): Derrick Boats, Tunnel Shovels.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $75.55
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $120.88

Operating Engineer - Road & Heavy Construction VI

Mixers (Concrete with loading attachment), Concrete Pavers, Cableways, Land Derricks, Power Houses (Low Air Pressure Units).

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $71.78
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $114.85

Operating Engineer - Road & Heavy Construction VII

Barrier Movers , Barrier Transport and Machines of a Similar Nature.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $57.96
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $92.74

Operating Engineer - Road & Heavy Construction VIII

Utility Compressors

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $44.98
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $56.70

Operating Engineer - Road & Heavy Construction IX

Horizontal Boring Rig

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $68.25
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $109.20

Operating Engineer - Road & Heavy Construction X

Elevators (manually operated as personnel hoist).

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $62.73
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $100.37

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $48.73
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $77.97

Operating Engineer - Road & Heavy Construction XII

All Drills and Machines of a similar nature.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $72.53
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $116.05

Operating Engineer - Road & Heavy Construction XIII

Concrete Pumps, Concrete Plant, Stone Crushers, Double Drum Hoist, Power Houses (other than above).

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $70.24
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $112.38

Operating Engineer - Road & Heavy Construction XIV

Concrete Mixer

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $67.16
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $107.46

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $45.27

Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $72.43

Operating Engineer - Road & Heavy Construction XVI

Concrete Breaking Machines, Hoists (Single Drum), Load Masters, Locomotives (over ten tons) and Dinkies over ten tons, Hydraulic Crane-Second Engineer.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $64.13
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $102.61

Operating Engineer - Road & Heavy Construction XVII

On-Site concrete plant engineer, On-site Asphalt Plant Engineer, and Vibratory console.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $64.63
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $103.41

Operating Engineer - Road & Heavy Construction XVIII

Tower Crane

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $92.76
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $148.42

Operating Engineer - Paving I

Asphalt Spreaders, Autogrades (C.M.I.), Roto/Mil

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $71.78
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $114.85

Operating Engineer - Paving II

Asphalt Roller

Effective Period: 7/1/2016 - 6/30/2017

Wage Rate per Hour: $69.91
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $111.86

Operating Engineer - Paving III

Asphalt Plants

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $59.14
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $94.62

Operating Engineer - Concrete I

Cranes

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $76.73
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Concrete II

Compressors

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $45.62
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Concrete III

Micro-traps (Negative Air Machines), Vac-All Remediation System.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $61.31
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Steel Erection I

Three Drum Derricks

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $79.54
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Shift Wage Rate: $127.26

Operating Engineer - Steel Erection II

Cranes, 2 Drum Derricks, Hydraulic Cranes, Fork Lifts and Boom Trucks.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $76.43
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $122.29

Operating Engineer - Steel Erection III

Compressors, Welding Machines.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $45.34
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $72.54

Operating Engineer - Steel Erection IV

Compressors - Not Combined with Welding Machine.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $43.17
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
Shift Wage Rate: $69.07

Operating Engineer - Building Work I

Forklifts, Plaster (Platform machine), Plaster Bucket, Concrete Pump and all other equipment used for hoisting material.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $63.12
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work II

Compressors, Welding Machines (Cutting Concrete-Tank Work), Paint Spraying, Sandblasting, Pumps (with the exclusion of Concrete Pumps), All Engines irrespective of Power (Power-Pac) used to drive Auxiliary Equipment, Air, Hydraulic, Jacking System, etc.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $47.26

Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work III

Double Drum

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $71.85
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work IV

Stone Derrick, Cranes, Hydraulic Cranes Boom Trucks.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $76.12
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work V

Dismantling and Erection of Cranes, Relief Engineer.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $70.13
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work VI

4 Pole Hoist, Single Drum Hoists.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $69.39
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours

Operating Engineer - Building Work VII

Rack & Pinion and House Cars

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $55.17
Supplemental Benefit Rate per Hour: $31.10
Supplemental Note: $56.50 overtime hours
For New House Car projects Wage Rate per Hour $44.02

Overtime Description

On jobs of more than one shift, if an Employee fails to report for work through any cause over which the Employer has no control, the Employee on duty will continue to work at the rate of single time.

For House Cars and Rack & Pinion only: Overtime paid at time and one-half for all hours in excess of eight hours in a day, Saturday, Sunday and Holidays worked.

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day
Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Shift Rates

For Steel Erection Only: Shifts may be worked at the single time rate at other than the regular working hours (8:00 A.M. to 4:30 P.M.) on the following work ONLY: Heavy construction jobs on work below the street level, over railroad tracks and on building jobs.

(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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $50.50
Supplemental Benefit Rate per Hour: $45.88

Overtime

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

Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $44.45
Supplemental Benefit Rate per Hour: $37.84
Supplemental Note: Supplemental Benefit Overtime Rate: $46.84

Overtime Description

An optional 8th hour can be worked at straight time rate. If 9th hour is worked, then both hours or more (8th & 9th or more) will be at the double time rate of pay.

Overtime

Double time the regular rate after a 7 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
Shifts shall be any 7 hours beyond 4:00 P.M. for which the glazier shall receive 8 hours pay for 7 hours worked.

(Local #1281)

GLAZIER - REPAIR & MAINTENANCE
(For the Installation of Glass - All repair and maintenance work on a particular building, whenever performed, where the total cumulative contract value is under $127,628. Except where enumerated (i.e. plate glass windows) does not apply to non-residential buildings.)

Craft Jurisdiction for repair, maintenance and fabrication

Plate glass replacement, Residential glass replacement, Residential mirrors and shower doors, Storm windows and storm doors, Residential replacement windows, Herculite door repairs, Door closer repairs, Retrofit apartment house (non commercial buildings), Glass tinting.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $23.78
Supplemental Benefit Rate per Hour: $20.14

Overtime
Time and one half the regular rate after an 8 hour day.
Double time the regular rate for Sunday.
Time and one half the regular hourly rate after 40 hours in any work week.

Paid Holidays
New Year's Day
President's Day

Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

(Local #1281)

HEAT AND FROST INSULATOR

Heat & Frost Insulator

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $57.78
Supplemental Benefit Rate per Hour: $38.96

Overtime Description
Double time shall be paid for supplemental benefits during overtime work.
8th hour paid at time and one half.

Overtime
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

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

Paid Holidays
None

Shift Rates

The first shift shall work seven hours at the regular straight time rate. The second and third shift shall work seven hours the regular straight time hourly rate plus a fourteen percent wage and benefit premium.
Off hour work in occupied or retail buildings may be worked on weekdays with an increment of $1.00 per hour and eight hours pay for seven (7) hours worked. Double time will apply for over seven (7) hours worked on weekdays, weekends or holidays.

(Local #12) (BCA)

HOUSE WRECKER
(TOTAL DEMOLITION)

House Wrecker - Tier A

On all work sites the first, second, eleventh and every third House Wrecker thereafter will be Tier A House Wreckers (i.e. 1st, 2nd, 11th, 14th etc). Other House Wreckers may be Tier B House Wreckers.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $36.33
Supplemental Benefit Rate per Hour: $27.77

House Wrecker - Tier B

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $25.56
Supplemental Benefit Rate per Hour: $20.45

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $43.75
Supplemental Benefit Rate per Hour: $49.57
Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Overtime Description
Time and one half the regular rate after a 7 hour day for a maximum of two hours on any regular work day (the 8th and 9th hour) and double time shall be paid for all work on a regular work day thereafter, time and one half the regular rate for Saturday for the first seven hours of work and double time shall be paid for all work on a Saturday thereafter.

Overtime
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
For off shift work - 8 hours pay for 7 hours of work. When two or three shifts are employed on a job, Monday through Friday, the workday for each shift shall be seven hours and paid for ten and one-half hours at the single time rate. When two or three shifts are worked on Saturday, Sunday or holidays, each shift shall be seven hours and paid fifteen and three-quarters hours.

(Local #580)

IRON WORKER - STRUCTURAL

Iron Worker - Structural

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $49.50
Supplemental Benefit Rate per Hour: $69.74
Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Overtime Description
Monday through Friday- the first eight hours are paid at straight time, the 9th and 10th hours are paid at time and one-half the regular rate, all additional weekday overtime is paid at double the regular rate. Saturdays- the first eight hours are paid at time and one-half the regular rate, double time thereafter. Sunday-all shifts are paid at double time.

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

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day on Christmas Eve if work is performed in the A.M.
1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates
Monday through Friday - First Shift: First eight hours are paid at straight time, the 9th & 10th hours are paid at time and a half, double time paid thereafter. Second and third Shifts: First eight hours are paid at time and one-half, double time thereafter. Saturdays: All shifts, first eight hours paid at time and one-half, double time thereafter: Sunday all shifts are paid at double time.

(Local #40 & #361)

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $41.00
Supplemental Benefit Rate per Hour: $38.63

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

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
Labor Day
Thanksgiving Day

Shift Rates
When two shifts are employed, single time rate shall be paid for each shift. When three shifts are found necessary, each shift shall work seven and one half hours (7 ½), but shall be paid for eight (8) hours of labor, and be permitted one half hour for lunch.

(Local #731)

LANDSCAPING
(Landscaping tasks, 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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $27.00
Supplemental Benefit Rate per Hour: $14.55

Landscaper (3 - 6 years experience)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $26.00
Supplemental Benefit Rate per Hour: $14.55

Landscaper (up to 3 years experience)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $23.50
Supplemental Benefit Rate per Hour: $14.55

Groundperson

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $23.50
Supplemental Benefit Rate per Hour: $14.55

Tree Remover / Pruner

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $32.00
Supplemental Benefit Rate per Hour: $14.55

Landscaper Sprayer (Pesticide Applicator)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $22.00
Supplemental Benefit Rate per Hour: $14.55

Watering - Plant Maintainer

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $17.00
Supplemental Benefit Rate per Hour: $14.55

Overtime Description

For all overtime work performed, supplemental benefits shall include an additional seventy-five ($0.75) cents per hour.

Overtime

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

Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays

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

Shift Rates

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: 7/1/2016 - 12/31/2016
Wage Rate per Hour: $52.32
Supplemental Benefit Rate per Hour: $37.64

Effective Period: 1/1/2017 - 6/30/2017
Wage Rate per Hour: $52.74
Supplemental Benefit Rate per Hour: $38.67

Marble Finisher

Effective Period: 7/1/2016 - 12/31/2016
Wage Rate per Hour: $41.11
Supplemental Benefit Rate per Hour: $35.91

Effective Period: 1/1/2017 - 6/30/2017
Wage Rate per Hour: $41.46
Supplemental Benefit Rate per Hour: $36.64

Marble Polisher

Effective Period: 7/1/2016 - 12/31/2016
Wage Rate per Hour: $37.49
Supplemental Benefit Rate per Hour: $27.80

Effective Period: 1/1/2017 - 6/30/2017
Wage Rate per Hour: $37.93
Supplemental Benefit Rate per Hour: $28.33

Overtime Description
Supplemental Benefit contributions are to be made at the applicable overtime rates. Time and one half the regular rate after a 7 hour day or time and one half the regular rate after an 8 hour day - chosen by Employer at the start of the project and then would last for the full duration of the project.

Overtime
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

(Local #7)

MASON TENDER

Mason Tender

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $37.55
Supplemental Benefit Rate per Hour: $29.04

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $36.19
Supplemental Benefit Rate per Hour: $22.95

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $25.38

Supplemental Benefit Rate per Hour: $17.27

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

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

(Local #79)

METALLIC LATHER

Metallic Lather

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $44.53
Supplemental Benefit Rate per Hour: $42.67
Supplemental Note: Supplemental benefits for overtime are paid at the appropriate overtime rate.

Overtime Description
Overtime would be time and one half the regular rate after a seven (7) or eight (8) hours workday, which would be set at the start of the job.

Overtime
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day

Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day on Christmas Eve if work is performed in the A.M.
1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates
There will be no shift differential paid on the first shift if more than one shift is employed. The shift differential will remain $12/hour on the second and third shift for the first eight (8) hours if worked. There will be no pyramiding on overtime worked on second and third shifts. The time and one half (1.5x) rate will be against the base wage rate, not the shift differential

(Local #46)

MILLWRIGHT

Millwright

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $51.50
Supplemental Benefit Rate per Hour: $52.41

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $46.52
Supplemental Benefit Rate per Hour: $39.84
Supplemental Note: Supplemental benefits for overtime to be paid at the rate of $50.86 per hour.

Mosaic Mechanic - Mosaic & Terrazzo Finisher

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $44.91
Supplemental Benefit Rate per Hour: $39.83
Supplemental Note: Supplemental benefits for overtime to be paid at the rate of $50.85 per hour.

Mosaic Mechanic - Machine Operator Grinder

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $44.91
Supplemental Benefit Rate per Hour: $39.83
Supplemental Note: Supplemental benefits for overtime to be paid at the rate of $50.85 per hour.

Overtime

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Good Friday
Independence Day
Labor Day
Columbus Day

Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

(Local #7)

PAINTER

Painter - Brush & Roller

Effective Period: 7/1/2016 - 4/30/2017
Wage Rate per Hour: $42.50
Supplemental Benefit Rate per Hour: $26.62
Supplemental Note: $31.25 on overtime

Effective Period: 5/1/2017 - 6/30/2017
Wage Rate per Hour: $44.10
Supplemental Benefit Rate per Hour: $27.02
Supplemental Note: $ 31.65 on overtime

Spray & Scaffold / Decorative / Sandblast

Effective Period: 7/1/2016 - 4/30/2017
Wage Rate per Hour: $45.50
Supplemental Benefit Rate per Hour: $26.62
Supplemental Note: $ 31.25 on overtime

Effective Period: 5/1/2017 - 6/30/2017
Wage Rate per Hour: $47.10
Supplemental Benefit Rate per Hour: $27.02
Supplemental Note: $ 31.65 on overtime

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day

Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

(District Council of Painters #9)

PAINTER - METAL POLISHER

METAL POLISHER

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $28.88
Supplemental Benefit Rate per Hour: $6.96

METAL POLISHER - NEW CONSTRUCTION

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $29.83
Supplemental Benefit Rate per Hour: $6.96

METAL POLISHER - SCAFFOLD OVER 34 FEET

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $32.38
Supplemental Benefit Rate per Hour: $6.96

Overtime Description
All work performed on Saturdays shall be paid at time-in-a half. The exception being; for suspended scaffold work and work deemed as a construction project; an eight (8) hour shift lost during the week due to circumstances beyond the control of the employer, up to amaximumof eight (8) hours per week, may be worked on Saturday at the straight time rate.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.
Triple time the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates
Four Days a week at Ten (10) hours straight a day.

Local 8A-28A

PAINTER - STRIPER

Striper (paint)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $35.00
Supplemental Benefit Rate per Hour: $12.32
Supplemental Note: Overtime Supplemental Benefit rate - $8.02; New Hire Rate (0-3 months) - $0.00

Lineperson (thermoplastic)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $39.00
Supplemental Benefit Rate per Hour: $12.32
Supplemental Note: Overtime Supplemental Benefit rate - $8.02; New Hire Rate (0-3 months) - $0.00

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
Good Friday
Memorial Day
Independence Day
Labor Day

Columbus Day
Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates
Employees hired before April 1, 2003: 15% night shift premium differential for work commenced at 9:00 PM or later.

Vacation
Employees with one to two years service shall accrue vacation based on hours worked: 250 hours worked - 1 day vacation; 500 hours worked - 2 days vacation; 750 hours worked - 3 days vacation; 900 hours worked - 4 days vacation; 1,000 hours worked - 5 days vacation. Employees with two to five years service receive two weeks vacation. Employees with five to twenty years service receive three weeks vacation. Employees with twenty to twenty-five years service receive four weeks vacation. Employees with 25 or more years service receive five weeks vacation. Vacation must be taken during winter months. 2 Personal Days except employees hired after 4/1/12 who do not have 2 years of service.

(Local #917)

PAINTER - STRUCTURAL STEEL

Painters on Structural Steel

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $49.00
Supplemental Benefit Rate per Hour: $36.08

Painter - Power Tool

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $55.00
Supplemental Benefit Rate per Hour: $36.08

Overtime Description
Supplemental Benefits shall be paid for each hour worked, up to forty (40) hours per week for the period of May 1st to November 15th or up to fifty (50) hours per week for the period of November 16th to April 30th.

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day

Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates
Regular hourly rates plus a ten per cent (10%) differential

(Local #806)

PAPERHANGER

Paperhanger

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $43.58
Supplemental Benefit Rate per Hour: $30.73
Supplemental Note: Supplemental benefits are to be paid at the appropriate straight time and overtime rate.

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
Evening shift - 4:30 P.M. to 12:00 Midnight (regular rate of pay); any work performed before 7:00 A.M. shall be at time and one half the regular base rate of pay.

(District Council of Painters #9)

PAVER AND ROADBUILDER

Paver & Roadbuilder - Formsetter

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $45.35
Supplemental Benefit Rate per Hour: $38.95

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $41.48
Supplemental Benefit Rate per Hour: $38.95

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $45.95
Supplemental Benefit Rate per Hour: $38.95

Production Paver & Roadbuilder - Raker

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $45.35
Supplemental Benefit Rate per Hour: $38.95

Production Paver & Roadbuilder - Shoveler

General laborer (except removal of surfaces - see Paver and Roadbuilder-Laborer) including but not limited to tamper, AC paint and liquid tar work.

Effective Period: 7/1/2016 - 6/30/2017

Wage Rate per Hour: **$42.06**
Supplemental Benefit Rate per Hour: **$38.95**

Overtime Description
If an employee works New Year's Day or Christmas Day, they receive the single time rate plus 25%.

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

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day

Shift Rates
When two shifts are employed, the work period for each shift shall be a continuous eight (8) hours. When three shifts are employed, each shift will work seven and one half (7 ½) hours but will be paid for eight (8) hours since only one half (1/2) hour is allowed for meal time.
When two or more shifts are employed, single time will be paid for each shift.

Night Work - On night work, the first eight (8) hours of work will be paid for at the single time rate, except that production paving work shall be paid at 10% over the single time rate for the screed person, rakers and shovelers directly involved only. This differential is to be paid when there is only one shift and the shift works at night. All other workers will be exempt. Hours worked over eight (8) hours during said shift shall be paid for at the time and one-half rate.

(Local #1010)

PLASTERER

Plasterer

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: **$43.93**
Supplemental Benefit Rate per Hour: **$28.10**

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

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 #262)

PLASTERER - TENDER

Plasterer - Tender

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $37.55
Supplemental Benefit Rate per Hour: $29.04

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $65.67
Supplemental Benefit Rate per Hour: $29.28
Supplemental Note: Overtime supplemental benefit rate per hour: $58.28

Plumber - Temporary Services

Temporary Services - When there are no Plumbers on the job site, there may be three shifts designed to cover the entire twenty-four hour period, including weekends if necessary, at the following rate straight time.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $52.56
Supplemental Benefit Rate per Hour: $23.40

Overtime Description
Double time the regular rate after a 7 hour day - unless for new construction site work where the plumbing contract price is $1.5 million or less, the hours of labor can be 8 hours per day at the employers option. On Alteration jobs when other mechanical trades at the site are working an eighth hour at straight time, then the plumber shall also work an eighth hour at straight time.

Overtime
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Shift work, when directly specified in public agency or authority documents where plumbing contract is $8 million or less, will be permitted. 30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday. 50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

PLUMBER (MECHNICAL EQUIPMENT AND SERVICE)

(Mechanical Equipment and Service work shall include any repair and/or replacement of the present plumbing system.)

Plumber

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $39.42
Supplemental Benefit Rate per Hour: $14.19

Overtime

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

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Thanksgiving Day

Day after Thanksgiving
Christmas Day

Paid Holidays
None

(Plumbers Local # 1)

PLUMBER (RESIDENTIAL RATES FOR 1, 2 AND 3 FAMILY HOME CONSTRUCTION)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $45.47
Supplemental Benefit Rate per Hour: $21.26

Overtime
Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday. 50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

PLUMBER: PUMP & TANK
Oil Trades (Installation and Maintenance)

Plumber - Pump & Tank

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $63.52
Supplemental Benefit Rate per Hour: $22.91

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

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
All work outside the regular workday (8:00 A.M. to 3:30 P.M.) is to be paid at time and one half the regular hourly rate

(Plumbers Local #1)

POINTER, WATERPROOFER, CAULKER, SANDBLASTER, STEAMBLASTER
(Exterior Building Renovation)

Journeyperson

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $50.04
Supplemental Benefit Rate per Hour: $26.15

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $40.70
Supplemental Benefit Rate per Hour: $30.17

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)

SHEET METAL WORKER

Sheet Metal Worker

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $47.70
Supplemental Benefit Rate per Hour: $46.45
Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Sheet Metal Worker - Fan Maintenance

(The temporary operation of fans or blowers in new or existing buildings for heating and/or ventilation, and/or air conditioning prior to the completion of the project.)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $38.16
Supplemental Benefit Rate per Hour: $46.45

Sheet Metal Worker - Duct Cleaner

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $12.90
Supplemental Benefit Rate per Hour: $8.07

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

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
Work that can only be performed outside regular working hours (eight hours of work between 7:30 A.M. and 3:30 P.M.) - First shift (work between 3:30 P.M. and 11:30 P.M.) - 10% differential above the established hourly rate. Second shift (work between 11:30 P.M. and 7:30 A.M.) - 15% differential above the established hourly rate.

For Fan Maintenance: On all full shifts of fan maintenance work the straight time hourly rate of pay will be paid for each shift, including nights, Saturdays, Sundays, and holidays.

(Local #28)

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.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $43.25
Supplemental Benefit Rate per Hour: $24.41
Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

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

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

(Local #28)

SHIPYARD WORKER

Shipyard Mechanic - First Class

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $28.33
Supplemental Benefit Rate per Hour: $3.04

Shipyard Mechanic - Second Class

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $22.18
Supplemental Benefit Rate per Hour: $2.80

Shipyard Laborer - First Class

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $20.45
Supplemental Benefit Rate per Hour: $2.74

Shipyard Laborer - Second Class

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $14.36
Supplemental Benefit Rate per Hour: $2.50

Shipyard Dockhand - First Class

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $22.70
Supplemental Benefit Rate per Hour: $2.82

Shipyard Dockhand - Second Class

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $16.01
Supplemental Benefit Rate per Hour: $2.57

Overtime Description
Work performed on holiday is paid double time the regular hourly wage rate plus holiday pay.

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Time and one half the regular hourly rate after 40 hours in any work week.

Paid Holidays
New Year's Day
Martin Luther King Jr. Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Based on Survey Data

SIGN ERECTOR
(Sheet Metal, Plastic, Electric, and Neon)

Sign Erector

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $46.85
Supplemental Benefit Rate per Hour: $48.57

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.
Time and one half the regular rate for work on the following holiday(s).

Paid Holidays
New Year's Day
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates
Time and one half the regular hourly rate is to be paid for all hours worked outside the regular workday either (7:00 A.M. through 2:30 P.M.) or (8:00 A.M. through 3:30 P.M.)

(Local #137)

STEAMFITTER

Steamfitter I

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $55.50
Supplemental Benefit Rate per Hour: $54.29
Supplemental Note: Overtime supplemental benefit rate: $107.84

Steamfitter -Temporary Services

The steamfitters shall not do any other work and shall not be permitted to work more than one shift in a twenty-four hour day. When steamfitters are present during the regular working day, no temporary services steamfitter will be required

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $42.18
Supplemental Benefit Rate per Hour: $44.08

Overtime
Double time the regular rate after a 7 hour day.
Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

Shift Rates

Work performed between 3:30 P.M. and 7:00 A.M. and on Saturdays, Sundays and Holidays shall be at double time the regular hourly rate and paid at the overtime supplemental benefit rate above.

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $55.50
Supplemental Benefit Rate per Hour: $54.29
Supplemental Note: Overtime supplemental benefit rate: $107.84

Steamfitter -Temporary Services

The steamfitters shall not do any other work and shall not be permitted to work more than one shift in a twenty-four hour day. When steamfitters are present during the regular working day, no temporary services steamfitter will be required.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $42.18
Supplemental Benefit Rate per Hour: $44.08

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
May be performed outside of the regular workday except Saturday, Sunday and Holidays. A shift shall consist of eight working hours. All work performed in excess of eight hours shall be paid at double time. No shift shall commence after 7:00 P.M. on Friday or 7:00 P.M. the day before holidays. All work performed after 12:01 A.M. Saturday or 12:01 A.M. the day before a Holiday will be paid at double time. When shift work is performed the wage rate for regular time worked is a thirty percent premium together with fringe benefits.

On Transit Authority projects, where work is performed in the vicinity of tracks all shift work on weekends and holidays may be performed at the regular shift rates.

Local #638

STEAMFITTER - REFRIGERATION AND AIR CONDITIONER
(Maintenance and Installation Service Person)

Refrigeration and Air Conditioner Mechanic

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $39.50
Supplemental Benefit Rate per Hour: $15.06

Refrigeration and Air Conditioner Service Person V

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $32.46
Supplemental Benefit Rate per Hour: $13.53

Refrigeration and Air Conditioner Service Person IV

Effective Period: 7/1/2016 - 6/30/2017

Wage Rate per Hour: $26.89
Supplemental Benefit Rate per Hour: $12.26

Refrigeration and Air Conditioner Service Person III

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $23.08
Supplemental Benefit Rate per Hour: $11.31

Refrigeration and Air Conditioner Service Person II

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $19.14
Supplemental Benefit Rate per Hour: $10.43

Refrigeration and Air Conditioner Service Person I

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $14.00
Supplemental Benefit Rate per Hour: $9.46

Overtime

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

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
Independence Day
Labor Day
Veteran's Day
Thanksgiving Day
Christmas Day

Double time and one half the regular rate for work on the following holiday(s).
Martin Luther King Jr. Day
President's Day
Memorial Day
Columbus Day

Paid Holidays

New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day

(Local #638B)

STONE MASON - SETTER

Stone Mason - Setters

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $51.08
Supplemental Benefit Rate per Hour: $38.10

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
1/2 day on Christmas Eve if work is performed in the A.M.

Shift Rates
For all work outside the regular workday (8:00 A.M. to 3:30 P.M. Monday through Friday), the pay shall be straight time plus a ten percent (10%) differential.

(Bricklayers District Council)

TAPER

Drywall Taper

Effective Period: 7/1/2016 - 12/27/2016
Wage Rate per Hour: $47.32
Supplemental Benefit Rate per Hour: $22.68

Effective Period: 12/28/2016 - 6/30/2017
Wage Rate per Hour: $47.82
Supplemental Benefit Rate per Hour: $22.68

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays
Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Martin Luther King Jr. Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays
Any worker who reports to work on Christmas Eve or New Year's Eve pursuant to his employer's instruction shall be entitled to three (3) hours afternoon pay without working.

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $40.35
Supplemental Benefit Rate per Hour: $13.19
Supplemental Note: The above rate applies for Manhattan, Bronx, Brooklyn, Queens. $12.64 for Staten Island only.

Overtime

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).
New Year's Day
Lincoln's Birthday
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

Paid Holidays

New Year's Day
Lincoln's Birthday
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day
Employees have the option of observing either Martin Luther King's Birthday or the day after Thanksgiving instead of Lincoln's Birthday

Shift Rates

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $40.69
Supplemental Benefit Rate per Hour: $30.58

Overtime
Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays
Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

Shift Rates
Off shift work day (work performed outside the regular 8:00 A.M. to 3:30 P.M. workday): shift differential of one and one quarter (1¼) times the regular straight time rate of pay for the seven hours of actual off-shift work.

(Local #7)

TILE LAYER - SETTER

Tile Layer - Setter

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $52.68
Supplemental Benefit Rate per Hour: $34.48

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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $46.99
Supplemental Benefit Rate per Hour: $48.26

Overtime
Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.
Time and one half the regular hourly rate after 40 hours in any work week.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

Shift Rates

Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate.

(Local #1536)

TUNNEL WORKER

Blasters, Mucking Machine Operators (Compressed Air Rates)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $60.97
Supplemental Benefit Rate per Hour: $50.72

Tunnel Workers (Compressed Air Rates)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $58.86
Supplemental Benefit Rate per Hour: $49.03

Top Nipper (Compressed Air Rates)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $57.78
Supplemental Benefit Rate per Hour: $48.16

Outside Lock Tender, Outside Gauge Tender,Muck Lock Tender (Compressed Air Rates)

Effective Period: 7/1/2016 - 6/30/2017

Wage Rate per Hour: $56.74
Supplemental Benefit Rate per Hour: $47.25

Bottom Bell & Top Bell Signal Person: Shaft Person (Compressed Air Rates)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $56.74
Supplemental Benefit Rate per Hour: $47.25

Changehouse Attendant: Powder Watchperson (Compressed Air Rates)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $49.69
Supplemental Benefit Rate per Hour: $44.69

Blasters (Free Air Rates)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $58.19
Supplemental Benefit Rate per Hour: $48.68

Tunnel Workers (Free Air Rates)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $55.69
Supplemental Benefit Rate per Hour: $46.61

All Others (Free Air Rates)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $51.45
Supplemental Benefit Rate per Hour: $43.13

Microtunneling (Free Air Rates)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $44.55
Supplemental Benefit Rate per Hour: $37.29

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.
For Small-Bore Micro Tunneling Machines - Time and one-half the regular rate shall be paid for all overtime.

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

(Local #147)

WELDER

TO BE PAID AT THE RATE OF THE JOURNEYPERSON IN THE TRADE PERFORMING THE WORK.

(NO TEXT THIS PAGE)

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.

TABLE OF CONTENTS

CLASSIFICATION	PAGE
ASBESTOS HANDLER	3
BOILERMAKER	3
BRICKLAYER	4
CARPENTER	5
CEMENT MASON	6
CEMENT AND CONCRETE WORKER	7
DERRICKPERSON & RIGGER (STONE)	8
DOCKBUILDER/PILE DRIVER	8
ELECTRICIAN	9
ELEVATOR CONSTRUCTOR	12
ELEVATOR REPAIR & MAINTENANCE	13
ENGINEER	14
ENGINEER - OPERATING	14
FLOOR COVERER	15
GLAZIER	16
HEAT & FROST INSULATOR	16
HOUSE WRECKER	17
IRON WORKER - ORNAMENTAL	18
IRON WORKER - STRUCTURAL	18
LABORER (FOUNDATION, CONCRETE, EXCAVATING, STREET PIPE LAYER & COMMON)	19
MARBLE MECHANICS	20
MASON TENDER	21
METALLIC LATHER	22
MILLWRIGHT	22
PAVER AND ROADBUILDER	23
PAINTER	24
PAINTER - METAL POLISHER	25
PAINTER - STRUCTURAL STEEL	25
PLASTERER	26
PLASTERER - TENDER	27
PLUMBER	27
POINTER, WATERPROOFER, CAULKER, SANDBLASTER, STEAMBLASTER	29
ROOFER	29
SHEET METAL WORKER	30
SIGN ERECTOR	31
STEAMFITTER	32
STONE MASON - SETTER	33
TAPER	34
TILE LAYER - SETTER	35
TIMBERPERSON	35

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

Asbestos Handler (First 1000 Hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 78% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $16.45

Asbestos Handler (Second 1000 Hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $16.45

Asbestos Handler (Third 1000 Hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 83% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $16.45

Asbestos Handler (Fourth 1000 Hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 89% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $16.45

(Local #78)

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

Boilermaker (First Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $30.43
Effective 1/1/2017 - Supplemental Benefit Rate Per Hour: $30.84

Boilermaker (Second Year: 1st Six Months)

Effective Period: 7/1/2016 - 6/30/2017

Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $32.13
Effective 1/1/2017 - Supplemental Benefit Rate Per Hour: $32.57

Boilermaker (Second Year: 2nd Six Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $33.82
Effective 1/1/2017 - Supplemental Benefit Rate Per Hour: $34.29

Boilermaker (Third Year: 1st Six Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $35.53
Effective 1/1/2017 - Supplemental Benefit Rate Per Hour: $36.03

Boilermaker (Third Year: 2nd Six Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 85% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $37.23
Effective 1/1/2017 - Supplemental Benefit Rate Per Hour: $37.76

Boilermaker (Fourth Year: 1st Six Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $38.93
Effective 1/1/2017 - Supplemental Benefit Rate Per Hour: $39.51

Boilermaker (Fourth Year: 2nd Six Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $40.63
Effective 1/1/2017 - Supplemental Benefit Rate Per Hour: $41.22

(Local #5)

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

Bricklayer (First 750 Hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.35

Bricklayer (Second 750 Hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.35

Bricklayer (Third 750 Hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.35

Bricklayer (Fourth 750 Hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.35

Bricklayer (Fifth 750 Hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.35

Bricklayer (Sixth 750 Hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $18.35

(Bricklayer District Council)

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

Carpenter (First Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Benefit Rate Per Hour For Building Apprentice: $31.34

Supplemental Benefit Rate Per Hour For Heavy Apprentice: $32.52

Carpenter (Second Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour For Building Apprentice: $31.34
Supplemental Benefit Rate Per Hour For Heavy Apprentice: $32.52

Carpenter (Third Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour For Building Apprentice: $31.34
Supplemental Benefit Rate Per Hour For Heavy Apprentice: $32.52

Carpenter (Fourth Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour For Building Apprentice: $31.34
Supplemental Benefit Rate Per Hour For Heavy Apprentice: $32.52

(Carpenters District Council)

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

Cement Mason (First Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's Rate

Cement Mason (Second Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's Rate

Cement Mason (Third Year)

Effective Period: 7/1/2016 - 6/30/2017
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 (First 1333 hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $16.25

Cement & Concrete Worker (Second 1333 hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $21.08

Cement & Concrete Worker (Last 1334 hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $21.90

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

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: $17.00
Supplemental Benefit Rate Per Hour: $10.75

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

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: $22.10
Supplemental Benefit Rate Per Hour: $15.13

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

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: $27.20
Supplemental Benefit Rate Per Hour: $15.63

(Cement Concrete Workers District Council)

DERRICKPERSON & RIGGER (STONE)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Derrickperson & Rigger (stone) - First Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 50% of Journeyperson's rate

Derrickperson & Rigger (stone) - Second Year: 1st Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

Derrickperson & Rigger (stone) - Second Year: 2nd Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

Derrickperson & Rigger (stone) - Third Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

(Local #197)

DOCKBUILDER/PILE DRIVER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Dockbuilder/Pile Driver (First Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $32.52

Dockbuilder/Pile Driver (Second Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: $32.52

Dockbuilder/Pile Driver (Third Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $32.52

Dockbuilder/Pile Driver (Fourth Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: $32.52

(Carpenters District Council)

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

Electrician (First Term: 0-6 Months)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $13.50
Supplemental Benefit Rate per Hour: $12.12
Overtime Supplemental Rate Per Hour: $13.01

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $14.00
Supplemental Benefit Rate per Hour: $12.37
Overtime Supplemental Rate Per Hour: $13.29

Electrician (First Term: 7-12 Months)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $14.50
Supplemental Benefit Rate per Hour: $12.63
Overtime Supplemental Rate Per Hour: $13.58

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $15.00
Supplemental Benefit Rate per Hour: $12.88
Overtime Supplemental Rate Per Hour: $13.87

Electrician (Second Term: 0-6 Months)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $15.50
Supplemental Benefit Rate per Hour: $13.14
Overtime Supplemental Rate Per Hour: $14.16

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $16.00
Supplemental Benefit Rate per Hour: $13.39
Overtime Supplemental Rate Per Hour: $14.44

Electrician (Second Term: 7-12 Months)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $16.50
Supplemental Benefit Rate per Hour: $13.64
Overtime Supplemental Rate Per Hour: $14.73

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $17.00
Supplemental Benefit Rate per Hour: $13.90
Overtime Supplemental Rate Per Hour: $15.02

Electrician (Third Term: 0-6 Months)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $17.50
Supplemental Benefit Rate per Hour: $14.15
Overtime Supplemental Rate Per Hour: $15.31

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $18.00
Supplemental Benefit Rate per Hour: $14.41
Overtime Supplemental Rate Per Hour: $15.59

Electrician (Third Term: 7-12 Months)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $18.50
Supplemental Benefit Rate per Hour: $14.66
Overtime Supplemental Rate Per Hour: $15.88

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $19.00
Supplemental Benefit Rate per Hour: $14.92
Overtime Supplemental Rate Per Hour: $16.17

Electrician (Fourth Term: 0-6 Months)

Effective Period: 7/1/2016 - 5/10/2017

Wage Rate per Hour: $19.50
Supplemental Benefit Rate per Hour: $15.17
Overtime Supplemental Rate Per Hour: $16.45

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $20.00
Supplemental Benefit Rate per Hour: $15.43
Overtime Supplemental Rate Per Hour: $16.75

Electrician (Fourth Term: 7-12 Months)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $21.50
Supplemental Benefit Rate per Hour: $16.19
Overtime Supplemental Rate Per Hour: $17.60

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $22.00
Supplemental Benefit Rate per Hour: $16.44
Overtime Supplemental Rate Per Hour: $17.89

Electrician (Fifth Term: 0-12 Months)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $23.50
Supplemental Benefit Rate per Hour: $19.54
Overtime Supplemental Rate Per Hour: $21.01

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $24.00
Supplemental Benefit Rate per Hour: $19.80
Overtime Supplemental Rate Per Hour: $21.30

Electrician (Fifth Term: 13-18 Months)

Effective Period: 7/1/2016 - 5/10/2017
Wage Rate per Hour: $28.00
Supplemental Benefit Rate per Hour: $21.85
Overtime Supplemental Rate Per Hour: $23.60

Effective Period: 5/11/2017 - 6/30/2017
Wage Rate per Hour: $28.50
Supplemental Benefit Rate per Hour: $22.10
Overtime Supplemental Rate Per Hour: $23.89

Overtime Description

Overtime Wage paid at time and one half the regular rate

(Local #3)

ELEVATOR CONSTRUCTOR
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Elevator (Constructor) - First Year

Effective Period: 7/1/2016 - 3/16/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $28.24

Effective Period: 3/17/2017 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $29.72

Elevator (Constructor) - Second Year

Effective Period: 7/1/2016 - 3/16/2017
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $28.67

Effective Period: 3/17/2017 - 6/30/2017
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $30.15

Elevator (Constructor) - Third Year

Effective Period: 7/1/2016 - 3/16/2017
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $29.52

Effective Period: 3/17/2017 - 6/30/2017
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $31.03

Elevator (Constructor) - Fourth Year

Effective Period: 7/1/2016 - 3/16/2017
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $30.37

Effective Period: 3/17/2017 - 6/30/2017
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $31.91

(Local #1)

ELEVATOR REPAIR & MAINTENANCE
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Elevator Service/Modernization Mechanic (First Year)

Effective Period: 7/1/2016 - 3/16/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Per Hour: $28.33

Effective Period: 3/17/2017 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Per Hour: $29.80

Elevator Service/Modernization Mechanic (Second Year)

Effective Period: 7/1/2016 - 3/16/2017
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Benefit Per Hour: $28.74

Effective Period: 3/17/2017 - 6/30/2017
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Benefit Per Hour: $30.23

Elevator Service/Modernization Mechanic (Third Year)

Effective Period: 7/1/2016 - 3/16/2017
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Per Hour: $29.58

Effective Period: 3/17/2017 - 6/30/2017
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Per Hour: $31.09

Elevator Service/Modernization Mechanic (Fourth Year)

Effective Period: 7/1/2016 - 3/16/2017
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Per Hour: $30.42

Effective Period: 3/17/2017 - 6/30/2017
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Per Hour: $31.95

(Local #1)

ENGINEER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

Engineer - First Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $24.28
Supplemental Benefit Rate per Hour: $23.41

Engineer - Second Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $30.35
Supplemental Benefit Rate per Hour: $23.41

Engineer - Third Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $33.38
Supplemental Benefit Rate per Hour: $23.41

Engineer - Fourth Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $36.41
Supplemental Benefit Rate per Hour: $23.41

(Local #15)

ENGINEER - OPERATING
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

Operating Engineer - First Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour 40% of Journeyperson's Rate
Supplemental Benefit Per Hour: $20.85

Operating Engineer - Second Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's Rate
Supplemental Benefit Per Hour: $20.85

Operating Engineer - Third Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 60% of Journeyperson's Rate
Supplemental Benefit Per Hour: $20.85

(Local #14)

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

Floor Coverer (First Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: $31.14

Floor Coverer (Second Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $31.14

Floor Coverer (Third Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $31.14

Floor Coverer (Fourth Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $31.14

(Carpenters District Council)

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

Glazier (First Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: $14.14

Glazier (Second Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $23.77

Glazier (Third Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $26.73

Glazier (Fourth Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $32.14

(Local #1281)

HEAT & FROST INSULATOR
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Heat & Frost Insulator (First Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Heat & Frost Insulator (Second Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Heat & Frost Insulator (Third Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 70% of Journeyperson's rate

Heat & Frost Insulator (Fourth Year)

Effective Period: 7/1/2016 - 6/30/2017
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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $21.17
Supplemental Benefit Rate per Hour: $17.99

House Wrecker - Second Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $22.32
Supplemental Benefit Rate per Hour: $17.99

House Wrecker - Third Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $23.97
Supplemental Benefit Rate per Hour: $17.99

House Wrecker - Fourth Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $26.53
Supplemental Benefit Rate per Hour: $17.99

(Mason Tenders District Council)

IRON WORKER - ORNAMENTAL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Iron Worker (Ornamental) - 1st Ten Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $37.90

Iron Worker (Ornamental) - 11 -16 Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $39.06

Iron Worker (Ornamental) - 17 - 22 Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $40.23

Iron Worker (Ornamental) - 23 - 28 Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $42.57

Iron Worker (Ornamental) - 29 - 36 Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $44.90

(Local #580)

IRON WORKER - STRUCTURAL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Iron Worker (Structural) - 1st Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $25.85
Supplemental Benefit Rate per Hour: $48.35

Iron Worker (Structural) - 7- 18 Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $26.45
Supplemental Benefit Rate per Hour: $48.35

Iron Worker (Structural) - 19 - 36 months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $27.05
Supplemental Benefit Rate per Hour: $48.35

(Local #40 and #361)

LABORER (FOUNDATION, CONCRETE, EXCAVATING, STREET PIPE LAYER & COMMON)
(Ratio Apprentice to Journeyperson: 1 to 1, 1 to 3)

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - First 1000 hours

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $38.63

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Second 1000 hours

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $38.63

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Third 1000 hours

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $38.63

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Fourth 1000 hours

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Rate Per Hour: $38.63

(Local #731)

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

Cutters & Setters - First 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Cutters & Setters - Second 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 55% of Journeyperson's rate

Cutters & Setters - Third 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 65% of Journeyperson's rate

Cutters & Setters - Fourth 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Cutters & Setters - Fifth 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 85% of Journeyperson's rate

Cutters & Setters - Sixth 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 95% of Journeyperson's rate

Polishers & Finishers - First 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Polishers & Finishers - Second 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Polishers & Finishers - Third 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Polishers & Finishers - Fourth 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
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: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $21.39
Supplemental Benefit Rate per Hour: $19.10

Mason Tender - Second Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $22.54
Supplemental Benefit Rate per Hour: $19.10

Mason Tender - Third Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $24.29
Supplemental Benefit Rate per Hour: $19.15

Mason Tender - Fourth Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $26.95
Supplemental Benefit Rate per Hour: $19.15

(Local #79)

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

Metallic Lather (First Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $23.01
Supplemental Benefit Rate per Hour: $17.95

Metallic Lather (Second Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $28.11
Supplemental Benefit Rate per Hour: $17.95

Metallic Lather (Third Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $33.21
Supplemental Benefit Rate per Hour: $17.95

(Local #46)

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

Millwright (First Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $28.33
Supplemental Benefit Rate per Hour: $34.28

Millwright (Second Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $33.48
Supplemental Benefit Rate per Hour: $37.88

Millwright (Third Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $38.63
Supplemental Benefit Rate per Hour: $42.13

Millwright (Fourth Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $48.93
Supplemental Benefit Rate per Hour: $48.69

(Local #740)

PAVER AND ROADBUILDER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Paver and Roadbuilder - First Year (Minimum 1000 hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $27.55
Supplemental Benefit Rate per Hour: $18.20

Paver and Roadbuilder - Second Year (Minimum 1000 hours)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $29.19
Supplemental Benefit Rate per Hour: $18.20

(Local #1010)

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

Painter - Brush & Roller - First Year

Effective Period: 7/1/2016 - 4/30/2017
Wage Rate per Hour: $17.00
Supplemental Benefit Rate per Hour: $12.38

Effective Period: 5/1/2017 - 6/30/2017
Wage Rate per Hour: $17.64
Supplemental Benefit Rate per Hour: $12.78

Painter - Brush & Roller - Second Year

Effective Period: 7/1/2016 - 4/30/2017
Wage Rate per Hour: $21.25
Supplemental Benefit Rate per Hour: $16.23

Effective Period: 5/1/2017 - 6/30/2017
Wage Rate per Hour: $22.05
Supplemental Benefit Rate per Hour: $16.63

Painter - Brush & Roller - Third Year

Effective Period: 7/1/2016 - 4/30/2017
Wage Rate per Hour: $25.50
Supplemental Benefit Rate per Hour: $19.14

Effective Period: 5/1/2017 - 6/30/2017
Wage Rate per Hour: $26.46
Supplemental Benefit Rate per Hour: $19.54

Painter - Brush & Roller - Fourth Year

Effective Period: 7/1/2016 - 4/30/2017
Wage Rate per Hour: $34.00
Supplemental Benefit Rate per Hour: $24.52

Effective Period: 5/1/2017 - 6/30/2017
Wage Rate per Hour: $35.28
Supplemental Benefit Rate per Hour: $24.92

(District Council of Painters)

PAINTER - METAL POLISHER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Metal Polisher (First Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $11.75
Supplemental Benefit Rate per Hour: $5.13

Metal Polisher (Second Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $13.00
Supplemental Benefit Rate per Hour: $5.13

Metal Polisher (Third Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $15.75
Supplemental Benefit Rate per Hour: $5.13

(Local 8A-28)

PAINTER - STRUCTURAL STEEL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Painters - Structural Steel (First Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Painters - Structural Steel (Second Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Painters - Structural Steel (Third Year)

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #806)

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

Plasterer - First Year: 1st Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: $15.91

Plasterer - First Year: 2nd Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: $16.39

Plasterer - Second Year: 1st Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $18.36

Plasterer - Second Year: 2nd Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $19.44

Plasterer - Third Year: 1st Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $21.61

Plasterer - Third Year: 2nd Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $22.69

(Local #5[illegible])

PLASTERER - TENDER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Plasterer Tender - First Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $21.39
Supplemental Benefit Rate per Hour: $19.10

Plasterer Tender - Second Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $22.54
Supplemental Benefit Rate per Hour: $19.10

Plasterer Tender - Third Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $24.29
Supplemental Benefit Rate per Hour: $19.15

Plasterer Tender - Fourth Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $26.95
Supplemental Benefit Rate per Hour: $19.15

(Local #79)

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

Plumber - First Year: 1st Six Months

Effective Period: 7/1/2016 - 6/30/2017

Wage Rate per Hour: $14.00
Supplemental Benefit Rate per Hour: $0.71

Plumber - First Year: 2nd Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $14.00
Supplemental Benefit Rate per Hour: $2.96

Plumber - Second Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $24.07
Supplemental Benefit Rate per Hour: $13.21

Plumber - Third Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $26.17
Supplemental Benefit Rate per Hour: $13.21

Plumber - Fourth Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $29.02
Supplemental Benefit Rate per Hour: $13.21

Plumber - Fifth Year: 1st Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $30.42
Supplemental Benefit Rate per Hour: $13.21

Plumber - Fifth Year: 2nd Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $42.49
Supplemental Benefit Rate per Hour: $13.21

(Plumbers Local #1)

POINTER, WATERPROOFER, CAULKER, SANDBLASTER, STEAMBLASTER

(Exterior Building Renovation)

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

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - First Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $26.52
Supplemental Benefit Rate per Hour: $12.10

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Second Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $27.89
Supplemental Benefit Rate per Hour: $16.75

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Third Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $33.98
Supplemental Benefit Rate per Hour: $19.50

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Fourth Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $40.80
Supplemental Benefit Rate per Hour: $20.35

(Bricklayer District Council)

ROOFER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Roofer - First Year

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 35% of Journeyperson's Rate

Roofer - Second Year

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's Rate

Roofer - Third Year

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's Rate

Roofer - Fourth Year

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's Rate

(Local #8)

SHEET METAL WORKER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Sheet Metal Worker (0-6 Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 25% of Journeyperson's rate
Supplemental Rate Per Hour: $6.35

Sheet Metal Worker (7-18 Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: $17.12

Sheet Metal Worker (19-30 Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: $23.54

Sheet Metal Worker (31-36 Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $27.70

Sheet Metal Worker (37-42 Months)

Effective Period: 7/1/2016 - 6/30/2017

Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $29.11

Sheet Metal Worker (43-48 Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $33.96

Sheet Metal Worker (49-54 Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $36.07

Sheet Metal Worker (55-60 Months)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $38.15

(Local #28)

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

Sign Erector - First Year: 1st Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: $13.95

Sign Erector - First Year: 2nd Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: $15.83

Sign Erector - Second Year: 1st Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: $17.72

Sign Erector - Second Year: 2nd Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $19.60

Sign Erector - Third Year: 1st Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: $26.23

Sign Erector - Third Year: 2nd Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: $28.24

Sign Erector - Fourth Year: 1st Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $30.98

Sign Erector - Fourth Year: 2nd Six Months

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: $33.06

Sign Erector - Fifth Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: $35.15

Sign Erector - Sixth Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $37.22

(Local #137)

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

Steamfitter - First Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate and Supplemental Per Hour: 40% of Journeyperson's rate

Steamfitter - Second Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate and Supplemental Rate Per Hour: 50% of Journeyperson's rate.

Steamfitter - Third Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate and Supplemental Rate per Hour: 65% of Journeyperson's rate.

Steamfitter - Fourth Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate and Supplemental Rate Per Hour: 80% of Journeyperson's rate.

Steamfitter - Fifth Year

Effective Period: 7/1/2016 - 6/30/2017
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: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Second 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
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: 7/1/2016 - 6/30/2017
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: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Fifth 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
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: 7/1/2016 - 6/30/2017
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: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Drywall Taper - Second Year

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Drywall Taper - Third Year

Effective Period: 7/1/2016 - 6/30/2017
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: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

Tile Layer - Setter - Second 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 55% of Journeyperson's rate

Tile Layer - Setter - Third 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 65% of Journeyperson's rate

Tile Layer - Setter - Fourth 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Tile Layer - Setter - Fifth 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
Wage and Supplemental Rate Per Hour: 85% of Journeyperson's rate

Tile Layer - Setter - Sixth 750 Hours

Effective Period: 7/1/2016 - 6/30/2017
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: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: $32.33

Timberperson - Second Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: $32.33

Timberperson - Third Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: $32.33

Timberperson - Fourth Year

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: $32.33

(Local #1536)

NYC ADMINISTRATIVE CODE § 6-109 SCHEDULE OF "LIVING WAGES"

Contractors who provide the following services to the City of New York must post a copy of this Living Wage Schedule at their work site(s) as required by New York City Administrative Code § 6-109:

- **Building Services,**
- **Day Care Services,**
- **Food Services,**
- **Head Start Services,**
- **Homecare Services,**
- **Services to Persons with Cerebral Palsy, and**
- **Temporary Services.**

In accordance with NYC Administrative Code § 6-109, the Comptroller of the City of New York promulgated this schedule of living wages for the above services on contracts for non-emergency work in excess of the small purchase limit set by the Procurement Policy Board; contracting agencies must annex this schedule to such contracts.

This schedule is a compilation of separate determinations of the prevailing rate of wage and supplements made by the Comptroller for each trade classification listed herein pursuant to New York City Administrative Code section 6-109. The source of the wage and supplement rates, whether a collective bargaining agreement, survey data or other, is listed at the end of each classification.

A city service contractor or subcontractor that provides homecare services, day care services, head start services or services to persons with cerebral palsy must pay its covered employees that directly render such services in performance of the city service contract or subcontract no less than the living wage and must provide its employees health benefits (supplemental benefits) or must supplement their hourly wage rate by an amount no less than the health benefits supplement rate. This requirement applies for each hour that the employee works performing the city service contract or subcontract.

A city service contractor or subcontractor that provides building services, food services or temporary services must pay its employees that are engaged in performing the city service contract or subcontract no less than the living wage or the prevailing wage, whichever is greater. Where the living wage is greater than the prevailing wage, the city service contractor or subcontractor must either provide its employees health benefits or must supplement their hourly wage rate by an amount no less than the health benefits supplement rate. Where the prevailing wage is greater than the living wage, the city service contractor or subcontractor must provide its employees the prevailing wage and supplements. These requirements apply for each hour that the employee works performing the city service contract or subcontract.

The appropriate schedule of living wages must be posted at all work sites pursuant to NYC Administrative Code 6-109.

The 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 www.comptroller.nyc.gov. Schedules for future one-year periods will be published annually in the City Record on or about July 1st of each succeeding year and on our web site www.comptroller.nyc.gov.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§6-109 PREVAILING WAGE SCHEDULE

The living wage rate and the health benefit supplement rate are known through June 30 of each year and those rates are listed in this schedule.

The living wage rates listed in this schedule may not include all hourly wage calculations for overtime, shift differential, Holiday, Saturday, Sunday or other premium time work. Similarly, this schedule does not set forth every living wage practice with which employers must comply.

Some of the rates in this schedule are based on collective bargaining agreements. These 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 wage 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.

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, an agency's chief contracting officer must contact the Bureau of Labor Law to obtain a wage determination for a work classification not published in this schedule.

The information listed below is intended to assist you in meeting your living wage and prevailing wage obligation. Contractors are advised to review the Comptroller's Living Wage Schedule prior to submitting a bid for City work. Any wage rate error made by the contracting agency in the contract documents will not preclude a finding against the contractor for an underpayment of the applicable living wage or the applicable prevailing wage.

This schedule sets forth the living wage and benefit rates required to be annexed to and form part of the contract specifications for work covered by New York City Administrative Code § 6-109. Contractors performing such work are required to pay not less that the rates specified in this schedule for the applicable trade or occupation.

Benefits are paid for *EACH HOUR WORKED* unless otherwise noted.

Wasyl Kinach, P.E.
Director of Classifications
Bureau of Labor Law

TABLE OF CONTENTS

CLASSIFICATION	PAGE
BUILDING CLEANER AND MAINTAINER (OFFICE)	4
BUILDING CLEANER AND MAINTAINER (RESIDENTIAL)	4
CLEANER (PARKING GARAGE)	4
DAY CARE SERVICES	4
FOOD SERVICE EMPLOYEES	4
HEAD START SERVICES	5
HOMECARE SERVICES	6
LANDSCAPING AND GROUNDSKEEPING WORKER	6
SECURITY GUARD (ARMED)	6
SECURITY GUARD (UNARMED)	6
SERVICES TO PERSONS WITH CEREBRAL PALSY	7
TEMPORARY OFFICE SERVICES	7
WINDOW CLEANER	8

BUILDING CLEANER AND MAINTAINER (OFFICE)

For the above building service classification, see the Labor Law Section 230 Schedule.

BUILDING CLEANER AND MAINTAINER (RESIDENTIAL)

For the above building service classification, see the Labor Law Section 230 Schedule.

CLEANER (PARKING GARAGE)

For the above building service classification, see the Labor Law Section 230 Schedule.

DAY CARE SERVICES

Day Care Services

'Day Care Services' means provision of day care services through the city's center-based day care program administered under contract with the city's Administration for Children's Services. No other day care programs shall be covered, including family-based day care programs administered by city-contracted day care centers.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $10.00
Supplemental Benefit Rate per Hour: $1.50

(NYC Administrative Code §6-109)

FOOD SERVICE EMPLOYEES

Cook

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $16.81
Supplemental Benefit Rate per Hour: $1.75

Cafeteria Attendant

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $12.81
Supplemental Benefit Rate per Hour: $1.75

Counter Attendant

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $12.24
Supplemental Benefit Rate per Hour: $1.75

Kitchen Helper / Dishwasher

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $11.94
Supplemental Benefit Rate per Hour: $1.75

Overtime

Time and one half the regular hourly rate after 40 hours in any work week.

(Based on data from NYS Department of Labor Occupational Employment Statistics and US Department of Labor Bureau of Labor Statistics)

HEAD START SERVICES

Head Start Services

'Head Start Services' means provision of head start services through the city's center-based head start program administered under contract with the city's Administration for Children's Services. No other head start programs shall be covered.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $10.00
Supplemental Benefit Rate per Hour: $1.50

(NYC Administrative Code §6-109)

HOMECARE SERVICES

Home Care Services

'Homecare Services' means the provision of homecare services under the city's Medicaid Personal Care/Home Attendant or Housekeeping Programs, including but not limited to the In-Home Services for the Elderly Programs administered by the Department for the Aging.
For homecare services provided under the Personal Care Services program, the wage and supplemental benefit rate above shall apply only as long as the state and federal government maintain their combined aggregate proportionate share of funding and approved rates for homecare services in effect as of the date of the enactment of this section.
For contractors or subcontractors providing homecare services, the supplemental benefit rate may be waived by the terms of a bona fide collective bargaining agreement with respect to employees who have never worked a minimum of eighty (80) hours per month for two consecutive months for that covered employer, but such provision may not be waived for any employee once a minimum of eighty (80) hours for two consecutive months has been achieved.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $10.00
Supplemental Benefit Rate per Hour: $1.50

(NYC Administrative Code §6-109)

LANDSCAPING AND GROUNDSKEEPING WORKER

For the above building service classification, see the Labor Law Section 230 Schedule.

SECURITY GUARD (ARMED)

For the above building service classification, see the Labor Law Section 230 Schedule.

SECURITY GUARD (UNARMED)

For the above building service classification, see the Labor Law Section 230 Schedule.

SERVICES TO PERSONS WITH CEREBRAL PALSY

Services To Person With Cerebral Palsy

'Services to Persons with Cerebral Palsy' means provision of services which enable persons with cerebral palsy and related disabilities to lead independent and productive lives through an agency that provides health care, education, employment, housing and technology resources to such persons under contract with the city or the department of education.

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $10.00
Supplemental Benefit Rate per Hour: $1.50

(NYC Administrative Code §6-109)

TEMPORARY OFFICE SERVICES

Administrative Assistant

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $34.97
Supplemental Benefit Rate per Hour: None

Cashier

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $11.50
Supplemental Benefit Rate per Hour: None

Clerk (various)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $16.07
Supplemental Benefit Rate per Hour: None

Computer Assistant

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $19.07
Supplemental Benefit Rate per Hour: None

Data Entry Operator

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $16.70
Supplemental Benefit Rate per Hour: None

Receptionist

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $15.78
Supplemental Benefit Rate per Hour: None

Secretary (various)

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $20.22
Supplemental Benefit Rate per Hour: None

Word Processor

Effective Period: 7/1/2016 - 6/30/2017
Wage Rate per Hour: $20.32
Supplemental Benefit Rate per Hour: None

Overtime
Time and one half the regular hourly rate after 40 hours in any work week.

(Based on data from NYS Department of Labor Occupational Employment Statistics and US Department of Labor Bureau of Labor Statistics or NYC Administrative Code §6-109)

WINDOW CLEANER

For the above building service classification, see the Labor Law Section 230 Schedule.

THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
1 CENTRE STREET ROOM 1120
NEW YORK, N.Y. 10007-2341

TELEPHONE: (212) 669-362
FAX NUMBER: (212) 669-849

Leonard A. Mancusi
SENIOR ASSISTANT COMPTROLLER

ALAN G. HEVESI
COMPTROLLER

MEMORANDUM

November 6, 2000

To *Agency Chief Contracting Officers*

From: *Leonard A. Mancusi*

Re: *Security at Construction Sites*

Prior to the enactment of Administrative Code §6-109, security guards on construction sites were not subject to prevailing wages. Security guards under the New York State labor law are covered under §230 which provides that prevailing wages are to be paid for security guards in existing buildings. §6-109 of the Administrative Code which was enacted in 1996 closed this loophole by including all security guards working pursuant to a city contract as a prevailing wage trade.

Although some construction contract boilerplate language has been amended to include §6-109, sub-contractors performing security services have advised us that they were not aware of this provision and, since traditionally, security guards were not a covered trade on construction sites, and they were not advised by a prime contractor that they would have to pay prevailing wages, they have not been doing so.

To avoid the possibility of issuing stop payments against prime contractors for the failure of their security service sub-contractors to pay

prevailing wages, we suggest that you write to all your existing security guard sub-contractors and their primes and in the future, upon approval of a security guard sub-contractor, advise the contractors of their obligation to pay prevailing wages under §6-109 of the Administrative Code.

As always, your cooperation is appreciated.

LAM:er
ACCO.SECURITY AT SITES

Department of Design and Construction

INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

VOLUME 2 OF 3

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

_____
Contractor.

_____

Dated_____, **20**____

_____

APPROVED AS TO FORM
CERTIFIED AS TO LEGAL AUTHORITY

_____
Acting Corporation Counsel

_____

Dated_____, **20**____

_____

Department of Design and Construction

INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

VOLUME 2 OF 3

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

Northeast Remsco Construction, Inc.

Contractor.

Dated November 08, **20** 17

APPROVED AS TO FORM
CERTIFIED AS TO LEGAL AUTHORITY

Acting Corporation Counsel

Dated January 20, **20** 17

Department of Design and Construction

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

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

VOLUME 3 OF 3

SCHEDULE A
SPECIFICATIONS AND
REVISIONS TO STANDARD SPECIFICATIONS

FOR FURNISHING ALL LABOR AND MATERIALS NECESSARY AND REQUIRED FOR:

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION
PREPARED BY DEWBERRY ENGINEERS INC.

DECEMBER 4, 2016

17-074

VOLUME 3 OF 3

TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGES
SPECIFICATIONS AND STANDARDS OF NEW YORK CITY		1 to 2
SCHEDULE A	GENERAL CONDITIONS TO CONSTRUCTION CONTRACT	SA-1 to SA-14
R - PAGES	REVISIONS TO STANDARD SPECFICATIONS	R-1 to R-60
I-PAGES	NEW SECTIONS	I-1 to I-7
SW - PAGES	SEWER AND WATER MAIN SPECIFICATIONS	SW-1 to SW-28
EP7-PAGES	GAS COST SHARING (EP-7) STANDARD SPECIFICATIONS	EP7-1 to EP7-28A
HAZ-PAGES	SPECIFICATIONS FOR HANDLING, TRANSPORTATION AND DISPOSAL OF NONHAZARDOUS AND POTENTIALLY HAZARDOUS CONTAMINATED MATERIALS	HAZ-1 to HAZ-129
BMP-PAGES	SPECIFICATIONS FOR CONSTRUCTION OF BEST MANAGEMENT PRACTICE (BMP) AND MITIGATION AREA	BMP-1 to BMP-125
U-PAGES	SECTION U (VERSION 2.0)	U-1 to U-16
GEOTECHNICAL DATA REPORT (ATTACHMENT TO SW-PAGES)		1 TO 375

(NO TEXT ON THIS PAGE)

SPECIFICATIONS AND STANDARDS OF NEW YORK CITY

The following New York City Department of Transportation (NYCDOT) reference documents are available on-line at: http://www1.nyc.gov/site/ddc/resources/publications.page or for purchase between 9:00 A.M. and 3:00 P.M. at 55 Water St., Ground Floor, NYC, N.Y. 10041. Contact: Ms. Vivian Valdez, Tel. (212) 839-9434

1. NYCDOT Standard Highway Specifications, August 1, 2015
2. NYCDOT Standard Highway Details of Construction, July 1, 2010
3. NYCDOT Division of Street Lighting Specifications
4. NYCDOT Division of Street Lighting Standard Drawings
5. NYCDOT Standard Specifications for Traffic Signals
6. NYCDOT Standard Drawings for Traffic Signals

The following reference documents for New York City Department of Environmental Protection (NYCDEP) are available on-line at: http://www1.nyc.gov/site/ddc/resources/publications.page or for pick up between 8:00 A.M. and 4:00 P.M. at 30-30 Thomson Avenue, 3rd Floor, Division of Infrastructure, Long Island City, N.Y. 11101.
Contact: Mr. Waqar Ahmad, Tel. (718) 391-2056

1. NYCDEP Standard Sewer and Water Main Specifications, July 1, 2014
2. NYCDEP Instructions for Concrete Specifications, Jan. 92
3. NYCDEP General Specification 11-Concrete, November 1991
4. NYCDEP Sewer Design Standards, (September 2007) Revised January 2009

The following reference documents for New York City Department of Environmental Protection (NYCDEP) are available on-line at: http://www1.nyc.gov/site/ddc/resources/publications.page or for pick up between 8:00 A.M. and 4:00 P.M. at 30-30 Thomson Avenue, 3rd Floor, Division of Infrastructure, Long Island City, N.Y. 11101.
Contact: Mr. Robert Kuhlmann, Tel. (718) 391-2145

1. NYCDEP Water Main Standard Drawings, November 2010
2. Specifications for Trunk Main Work, July 2014
3. Standards for Green Infrastructure, latest version, available only on-line at: http://www.nyc.gov/html/dep/html/stormwater/green_infrastructure_standards.shtml

Water main work material specifications are available at the Department of Environmental Protection, 59-17 Junction Boulevard, 3rd Floor Low-Rise Building, Flushing, N.Y. 11373-5108.
Contact: Mr. Tarlock Sahansra, P.E., Tel. (718) 595-5302
E-mail: TSAHANSRA@DEP.NYC.GOV

Standard Specifications and Drawings for New York City Fire Department Communications facilities are available from the FDNY Facilities Management Bureau, Plant Operations Engineering, 316 Sgt. Beers Avenue Cluster 1 Box 16, Fort Totten, N.Y. 11359.
Contact: Mr. Ed Durkin, Tel. (718) 281-3933

Tree Planting Standards of the City of New York Parks & Recreation are available at the following Department of Parks & Recreation website: http://www.nycgovparks.org/pagefiles/53/Tree-Planting-Standards.pdf

SPECIFICATIONS AND STANDARDS OF PRIVATE UTILITIES

The Following reference document for Private Utility Work is available for pick up between 8:30 A.M. and 4:00 P.M. at 30-30 Thomson Avenue, First Floor Bid Procurement Room, L.I.C., N.Y. 11101.

1. CET SPECIFICATIONS AND SKETCHES dated November 2010

SCHEDULE A

(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT (INCLUDING GENERAL CONDITIONS RELATED TO ARTICLE 22 – INSURANCE)

PART I. REQUIRED INFORMATION

INFORMATION FOR BIDDERS SECTION 26 BID SECURITY The **Contractor** shall obtain a bid security in the amount indicated to the right.	Required provided the TOTAL BID PRICE set forth on the Bid Form is $1,000,000. or more. Certified Check: 2% of Bid Amount or Bond: 10% of Bid Amount
INFORMATION FOR BIDDERS SECTION 26 PERFORMANCE AND PAYMENT BONDS The **Contractor** shall obtain performance and payment bonds in the amount indicated to the right.	Required for contracts in the amount of $1,000,000 or more. Performance Security and Payment Security shall each be in an amount equal to 100% of the Contract Price.
CONTRACT ARTICLE 14 DATE FOR SUBSTANTIAL COMPLETION The **Contractor** shall substantially complete the **Work** in the number of calendar days indicated to the right.	See Page SA-4
CONTRACT ARTICLE 15 LIQUIDATED DAMAGES If the **Contractor** fails to substantially complete the **Work** within the time fixed for substantial completion 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 amount indicated to the right.	$4,000.00 for each consecutive calendar day over the Completion Time
CONTRACT ARTICLE 17. SUB-CONTRACTOR The **Contractor** shall not make subcontracts totaling an amount more than the percentage of the total **Contract** price indicated to the right.	Not to exceed 75 % of the **Contract** price
CONTRACT ARTICLE 21. RETAINAGE The **Commissioner** shall deduct and retain until the substantial completion of the **Work** the percent value of the **Work** indicated to the right.	5 % of the value of the **Work**

CONTRACT ARTICLE 22. **(Per Directions Below)**	See pages SA-5 through SA-13
CONTRACT ARTICLE 24. **DEPOSIT GUARANTEE** As security for the faithful performance of its obligations, the **Contractor**, upon filing its requisition for payment on **Substantial Completion**, shall deposit with the **Commissioner** a sum equal to the percentage of the **Contract** price indicated to the right.	1% of **Contract** price
CONTRACT ARTICLE 24. **PERIOD OF GUARANTEE** Periods of maintenance and guarantee other than the period set forth in Article 24.1 are indicated to the right.	Eighteen (18) Months, excluding Trees Twenty-four (24) Months for Tree Planting
CONTRACT ARTICLE 74. **STATEMENT OF WORK** The **Contractor** shall furnish all labor and materials and perform all **Work** in strict accordance with the **Contract Drawings**, **Specifications,** and all **Addenda** thereto.	See Contract Article 74
CONTRACT ARTICLE 75. **COMPENSATION TO BE PAID TO CONTRACTOR** The **City** shall pay and the **Contractor** shall accept in full consideration for the performance of the **Contract**, subject to additions and deductions as provided in Contract Article 75, 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.**	See Contract Article 75
CONTRACT ARTICLE 78. **PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT**	See M/WBE Utilization Plan in the Bid Booklet

STANDARD HIGHWAY SPECIFICATIONS SECTION 6.40 LIQUIDATED DAMAGES FOR ENGINEER'S FIELD OFFICE If the Contractor fails to satisfactorily provide the field office and all equipment specified in **Section 6.40 - Engineer's Field Office**, and/or if a cited deficiency exceed seventy two (72) hours after notice from the Engineer in writing, or is permitted to recur, liquidated damages will be assessed in the amount specified herein for each subsequent calendar day or part thereof that a cited deficiency resulting in nonpayment, as described in **Section 6.40.5**, is not corrected.	$ 250.00 for each calendar day of deficiency
STANDARD HIGHWAY SPECIFICATIONS SECTION 6.70 LIQUIDATED DAMAGES FOR MAINTENANCE AND PROTECTION OF TRAFFIC	$ 250.00 for each instance of failure to comply with the Maintenance and Protection of Traffic requirements within three (3) hours after written notice from the Engineer $ 500.00 for each and every hour of failing to open the entire width of roadway to traffic the morning following a night/weekend work operation
STANDARD HIGHWAY SPECIFICATIONS SECTION 7.13 LIQUIDATED DAMAGES FOR MAINTENANCE OF SITE If the Contractor fails to comply, within three (3) consecutive hours after written notice from the Engineer, with the requirements of **Section 7.13 - Maintenance of Site**, the Contractor shall pay to the City of New York, until such notice has been complied with or rescinded, the sum specified above per calendar day, for each instance of such failure, as liquidated damages and not as a penalty, for such default.	$ 800.00 for each calendar day, for each occurrence

Date for Substantial Completion (Reference: Article 14)

The Contractor shall substantially complete the Work within the Final Contract Duration determined in accordance with the terms and conditions set forth herein.

The Base Contract Duration for this project is 915 consecutive calendar days ("ccds").

The Final Contract Duration shall be the Base Contract Duration when a check mark is indicated before the word "NO", below, and shall be the Base Contract Duration adjusted by the table set forth below when a check mark is indicated before the word "YES", below.

_____ YES __√__ NO

When the Final Contract Duration is indicated above to be adjusted by the table below, the table may increase the Base Contract Duration depending on the date of scheduled substantial completion to avoid a scheduled substantial completion of the Work during the winter months. The date of scheduled substantial completion shall be determined by adding the Base Contract Duration to the date specified to commence work in the written Notice to Proceed. The Final Contract Duration shall then be determined as follows:

(a) Find the row that corresponds to the month of substantial completion based on the Base Contract Duration added to the date specified to commence work in the written Notice to Proceed.
(b) Find the number of days to be added to the Base Contract Duration in the table below. Add that number of days to the Base Contract Duration to obtain the Final Contract Duration in consecutive calendar days.

Month of Substantial Completion based on the Base Contract Duration	Number of Days of adjustment
January	150
February	120
March	90
April	60
May	30
June	0
July	0
August	0
September	0
October	0
November –December 15	0
December 16 – December 31	180

In addition, should Item No. 9.30, "Storm Water Pollution Prevention," exist in the Contract and the required Storm Water Pollution Prevention Plan (SWPPP) does not conform to NYSDEC's recommended Standards, an additional 60 ccd shall be added to the above Final Contract Duration.

(GENERAL CONDITIONS RELATING TO ARTICLE 22 – INSURANCE)

PART II. TYPES OF INSURANCE, MINIMUM LIMITS AND SPECIAL CONDITIONS

Note: All certificate(s) of insurance submitted pursuant to Contract Article 22.3. 3 must be accompanied by a Certification by Broker consistent with Part III below and include the following information:

- **For each insurance policy, the name and NAIC number of issuing company, number of policy, and effective dates;**
- **Policy limits consistent with the requirements listed below;**
- **Additional insureds or loss payees consistent with the requirements listed below; and**
- **The number assigned to the Contract by the City (in the "Description of Operations" field).**

Insurance indicated by a blackened box (■) or by X in a □ 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
■ Commercial General Liability Art. 22.1.1	The minimum limits shall be $ 3,000,000 per occurrence and $ 6,000,000 per project aggregate applicable to this **Contract.** Additional Insureds: 1. City of New York, including its officials and employees, with coverage at least as broad as ISO Form CG 20 10 and CG 20 37, 2. All person(s) or organization(s), if any, that Article 22.1.1(b) of the **Contract** requires to be named as Additional Insured(s), with coverage at least as broad as ISO Form CG 20 26. The Additional Insured endorsement shall either specify the entity's name, if known, or the entity's title (e.g., Project Manager),

■ Workers' Compensation Art. 22.1.2 ■ Disability Benefits Insurance Art. 22.1.2 ■ Employers' Liability Art. 22.1.2 ■ Jones Act Art. 22.1.3 ■ U.S. Longshoremen's and Harbor Workers Compensation Act Art. 22.1.3	Workers' Compensation, Employers' Liability, and Disability Benefits Insurance: Statutory per New York State law without regard to jurisdiction. **Note:** The following forms are acceptable: (1) New York State Workers' Compensation Board Form No. C-105.2, (2) State Insurance Fund Form No. U-26.3, (3) New York State Workers' Compensation Board Form No. DB-120.1 and (4) Request for WC/DB Exemption Form No. CE-200. The City will not accept an ACORD form as proof of Workers' Compensation or Disability Insurance. Jones Act and U.S. Longshoremen's and Harbor Workers' Compensation Act: Statutory per U.S. Law. ☐ Additional Requirements:

☐ Builders' Risk	Art. 22.1.4	100 % of total value of **Work** **Contractor** the Named Insured; the **City** both an Additional Insured and one of the loss payees as its interests may appear. If the **Work** does not involve construction of a new building or gut renovation work, the **Contractor** may provide an installation floater in lieu of Builders Risk insurance. Note: Builders Risk Insurance may terminate upon **Substantial Completion** of the **Work** in its entirety.
■ Commercial Auto Liability	Art. 22.1.5	$ 2,000,000 per accident combined single limit If vehicles are used for transporting hazardous materials, the **Contractor** shall provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90 Additional Insureds: (1) City of New York, including its officials and employees, and

☐Contractors Pollution Liability Art. 22.1.6	$ 5,000,000 per occurrence $ 5,000,000 aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
☐ Marine Protection and Indemnity Art. 22.1.7(a)	$_____ each occurrence $_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
☐ Hull and Machinery Insurance Art. 22.1.7(b)	$_____ per occurrence $_____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
☐ Marine Pollution Liability Art. 22.1.7(c)	$ 1,000,000 per occurrence $ 1,000,000 aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____

[OTHER] Art. 22.1.8 ☐ Railroad Protection Liability Policy (ISO-RIMA or equivalent form) approved by Permittor covering the work to be performed at the designated site and affording protection for damages arising out of bodily injury or death, physical damage to or destruction of property, including damage to the Insured's own property and conforming to the following: • Policy Endorsement CG 28 31 - Pollution Exclusion Amendment is required to be endorsed onto the policy when environmental-related work and/or exposures exist. • Indicate the Name and address of the Contractor to perform the work, the Contract # and the name of the railroad property where the work is being performed and the Agency Permit. • Evidence of Railroad Protective Liability Insurance, must be provided in the form of the Original Policy. A detailed Insurance Binder (ACORD or Manuscript Form) will be accepted pending issuance of the Original Policy, which must be provided within 30 days of the Binder Approval.	$ 2,000,000 per occurrence $ 6,000,000 annual aggregate Named Insureds: 1. New York City Transit Authority (NYCTA), the Manhattan and Bronx Surface Transit Operation Authority (MaBSTOA), the Staten Island Rapid Transit Operation Authority (SIRTOA), MTA Capital Construction Co., the Metropolitan Transportation Authority (MTA) including its subsidiaries and affiliates, and the City of New York (as Owner) and all other indemnified parties.

[OTHER] Art. 22.1.8

☐ Professional Liability

A. The Contractor's Professional Engineer shall maintain and submit evidence of Professional Liability Insurance in the minimum amount of $1,000,000 per claim. The policy or policies shall include an endorsement to cover the liability assumed by the Contractor under this Contract arising out of the negligent performance of professional services or caused by an error, omission or negligent act of the Contractor's Professional Engineer or anyone employed by the Contractor's Professional Engineer.

B. Claims-made policies will be accepted for Professional Liability Insurance. All such policies shall have an extended reporting period option or automatic coverage of not less than two (2) years. If available as an option, the Contractor's Professional Engineer shall purchase extended reporting period coverage effective on cancellation or termination of such insurance unless a new policy is secured with a retroactive date, including at least the last policy year.

[OTHER] Art. 22.1.8 ■ Engineer's Field Office **Section 6.40, Standard Highway Specifications**	Fire insurance, extended coverage and vandalism, malicious mischief and burglary, and theft insurance coverage in the amount of $40,000

[OTHER] Art. 22.1.8

☐ The Following Additional Insurance Must Be Provided:

Umbrella/Excess Liability Insurance - The Contractor shall provide Umbrella/Excess Liability Insurance in the minimum amount of $10,000,000 per Occurrence and $10,000,000 in Aggregate. The policy terms and condition should be at least as broad as the underlying policies. The underlying policies should comply with the insurance provision as outlined by the contract. Defense cost should be in addition to the limit of liability. The City of New York, including its officials and employees, should be included as additional insured as respects to the noted project.

SCHEDULE A
(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)
(GENERAL CONDITIONS RELATING TO ARTICLE 22 – INSURANCE)

PART III. CERTIFICATES OF INSURANCE

All certificates of insurance (except certificates of insurance solely evidencing Workers' Compensation Insurance, Employer's Liability Insurance, and/or Disability Benefits Insurance) must be accompanied by one of the following:

(1) the Certification by Insurance Broker or Agent on the following page setting forth the required information and signatures;

-- OR --

(2) copies of all policies as certified by an authorized representative of the issuing insurance carrier that are referenced in such certificate of insurance. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

CERTIFICATION BY INSURANCE BROKER OR AGENT

The undersigned insurance broker represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects.

_____
[Name of broker or agent (typewritten)]

_____
[Address of broker or agent (typewritten)]

_____
[Email address of broker or agent (typewritten)]

_____
[Phone number/Fax number of broker or agent (typewritten)]

_____
[Signature of authorized official, broker, or agent]

_____
[Name and title of authorized official, broker, or agent (typewritten)]

State of .....)
) ss.:
County of .....)

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

_____
NOTARY PUBLIC FOR THE STATE OF _____

SCHEDULE A

(GENERAL CONDITIONS TO CONSTRUCTION CONTRACT)

PART IV. ADDRESS OF COMMISSIONER

Wherever reference is made in Article 7 or Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth below or, in the absence of such address, to the **Commissioner's** address as provided elsewhere in this **Contract**.

DDC Director, Insurance Risk Manager

30 – 30 Thomson Avenue, 4th Floor (IDCNY Building)

Long Island City, NY 11101

(NO TEXT ON THIS PAGE)

R - PAGES

REVISIONS TO STANDARD SPECIFICATIONS

NOTICE

The Specification Bulletin(s) ("SB(s)") contained in this Section (R-Pages) may consist of revisions to the following Standard Specifications:

- New York City Department of Transportation ("NYC DOT") Standard Highway Specifications, dated 8/1/2015;
- New York City Department of Environmental Protection ("NYC DEP") Standard Sewer and Water Main Specifications, dated 7/1/2014; and
- NYC DEP Specifications for Trunk Main Work, dated 7/2014.

The SB(s) modify and supersede portions of the applicable Standard Specifications. The provisions contained in this Contract's I-Pages, S-Pages and SW-Pages may further modify the applicable Standard Specifications.

The following SB(s) are included as part of this contract:

- SB 16-001 – REVISIONS TO THE NYC DOT STANDARD HIGHWAY SPECIFICATIONS.
- SB 16-002 – REVISIONS TO THE NYC DEP STANDARD SEWER AND WATER MAIN SPECIFICATIONS.
- SB 17-001 – UV CURED-IN-PLACE-PIPE (CIPP) LINING METHOD
- SB 17-002 – RODENT AND WATERBUG PEST CONTROL
- SB 17-003 – ENGINEERS FIELD OFFICE
- SB 17-004 – FIRE DEPARTMENT FACILITIES
- SB 17-005 – DIGITAL PHOTOGRAPHS
- SB 17-006 – RECORDS OF SUBSURFACE STRUCTURES

(NO TEXT ON THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 16-001

Title: **REVISIONS TO NYC DOT STANDARD HIGHWAY SPECIFICATIONS**

Prepared:	Approved:
6/29/2016	6/29/2016
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 7/11/16.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) Refer to Page 3, Subsection 1.06.3;
Delete the third paragraph;
Substitute the following new paragraph:
"Any doubt as to the meaning of this contract or the specifications thereof, or any obscurity as to the wording of them, or any discrepancy between them, or any discrepancy between figures and drawings will be explained by the Engineer."

b) Refer to Page 5, Subsection 1.06.8;
Delete the words "tentative" wherever it occurs in the last paragraph.

c) Refer to Page 17, Subsection 1.06.23.(G), last paragraph;
Delete the word "asbestos" wherever it occurs.

d) Refer to Page 26, Subsection 1.06.29, line number four (4);
Delete the words and punctuation mark ", and at the prices fixed herein" in its entirety.

e) Refer to Page 41 Subsection 1.06.48.(C), 2nd paragraph, 1st line;
Delete from the first line starting from "have maximum grade of one (1) vertical on three (3) horizontal", in its entirety;
Substitute the following:
"have a maximum grade of one (1) vertical on twelve (12) horizontal, for pedestrian ramp and one (1) vertical on six (6) horizontal, for driveway ramp".

f) Refer to Page 87, Subsection 2.18.3(A), 4th paragraph;
Change "." to "," after "... and Appeals";
Add the following words: "and the health standards of OSHA of the U.S. Department of Labor."

g) Refer to Page 104, Subsection 3.01.3.(C).1.(c), 4th paragraph:
Delete the words "to a maximum of 70%"

h) Refer to Page 120, Subsection 3.05.5.(A), 2nd Table 3.05-V;
Delete the sentence: "Concrete of Type IA, IIA and IIIA shall have an air entrainment of 4 to 7 percent when the coarse aggregate is 1 1/2" stone and 5 to 7 percent when the coarse aggregate is 3/4" stone, with 6.5 percent desired in either case."
Substitute the following:
"Concrete of classes shown in Table 3.05-II shall have an air entrainment of 4 to 7 percent for size 357 coarse aggregate and 5 to 7 percent for size 67 or 57 aggregate, with 6.5 percent desired in either case. If concrete is pumped, air entrainment shall be measured after the pump."

i) Refer to Page 135, Subsection 3.05.9, 4th paragraph;
Add the following words to the end of the 4th paragraph: "Dosing of accelerators and retarders shall be per the manufacturer's published recommendations. Addition of an accelerator or retarder per this subsection will not require a separate mix design, unless requested by the Engineer."

j) Refer to Page 192, Subsection 4.06.12;
Delete the Subsection 4.06.12, in its entirety and substitute the words "4.06.12. (NO TEXT)." The use of rubble aggregate will not be permitted.

k) Refer to Page 282, Subsection 5.02.2.(C), 2nd paragraph;
Add the following words: "6 in x 12 in" after "At least four (4)"

l) Refer to Page 282, Subsection 5.02.2.(C), 2nd paragraph;
Delete the sentence: "Curing boxes shall be furnished in good operating condition, capable of maintaining cylinders under water at a curing temperature of 72°F. ±5°F."
Substitute the following:
"Curing boxes meeting the requirements of ASTM C31 and C511 shall be furnished in good operating condition, and shall maintain cylinders under water at a curing temperature of 73.5°F ±3.5°F. Curing boxes with rusted or corroded interior surfaces shall not be used."

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

No Changes.

(NO TEXT THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 16-002

Title: **REVISIONS TO THE NYC DEP STANDARD SEWER AND WATER MAIN SPECIFICATIONS**

Prepared:	Approved:
10/11/2016	10/11/2016
Richard Jones, P.E. CWI — Date	Mohsen Zargarelahi, P.E. — Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 11/14/16.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

- **ATTACHMENT 1:** Revised Section 40.05 – SHEETING AND BRACING
  Pages A1-1 through A1-7
- **ATTACHMENT 2:** Revised Section 70.91 – SHEETING
  Pages A2-1 through A2-3

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF ENVIROMENTAL PROTECTION STANDARD SEWER AND WATER MAIN SPECIFICATIONS, DATED 7/1/14:

All references contained below are to the New York City Department of Environmental Protection Standard Sewer and Water Main Specifications, Dated July 1, 2014. Said Standard Sewer and Water Main Specifications are hereby revised as follows:

a) **Refer** to Page III-6, Subsection 30.03.1;
Add the text ", C780 Annex 6" to line (2) after the words "C109".

b) **Refer** to Pages IV-12 through IV-18, Section 40.05 – SHEETING AND BRACING;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 1 (7 pages).

c) **Refer** to Page V-60, Subsection 50.72.5.(A);
Delete in its entirety the Subsection;
Substitute the revised Subsection:

"(A) Cement shall be either Type V cement meeting the requirements of ASTM C150 or blended cement containing 8% microsilica that meets the requirements of NYS Department of Transportation Standard Specification 701-03, Type IP (8)".

d) **Refer** to Page V-65, Subsection 50.72.7.(N);
Delete the second sentence "The test cubes shall be 4"x4"x4"."

e) **Refer** to Page V-66, Subsection 50.72.7.(N);
Delete the text:

Test cubes will be made and stored in accordance with ASTM C31 and tested in accordance with ASTM C39, except as otherwise modified by the Engineer. Each test will consist of three (3) cubes; one (1) to be tested at seven (7) days, the other two (2) at twenty-eight (28) days.

Substitute the revised text:

"Test cores will be made, cured, and tested in accordance with ASTM C42, except as otherwise modified by the Engineer. Test cores will be made from a shotcrete test board, where the shotcrete thickness matches the placed thickness. Each test will consist of three (3) cores; one (1) to be tested at seven (7) days, the other two (2) at twenty-eight (28) days."

f) **Refer** to Pages V-65, V-66, and V-67, Subsections 50.72.7.(N), 50.72.9, and 50.72.10;
Delete the text "Test Cube" wherever it appears;
Substitute the text "Test Core".

g) **Refer** to Page VII-25, Subsection 70.12.5.(B).(2);
Delete the text "and C492";
Substitute the replacement text "or C780 Annex 6"

h) **Refer** to Page VII-29, Subsection 70.13.4;
Add the text " or C780 Annex 6" after the words "C109".

i) **Refer** to Pages VII-48 through VII-51, Section 70.91 – SHEETING;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 2 (3 pages).

SECTION 40.05
SHEETING AND BRACING

40.05.1 SHEETING AND BRACING

(A) The sides of the trenches and excavations shall be supported by adequate sheeting and properly braced. All sheeting and bracing systems the Contractor elects to use or are ordered by the Engineer or the Department shall comply with these specifications and must receive the approvals stated herein. Timber sheeting and bracing shall be vertical sheeting with rangers and braces or horizontal sheeting supported by vertical steel soldier beams and the necessary bracing.

(B) Where the material to be excavated is of such character as to render it necessary, the sheeting shall be tongued and grooved and driven to such depths below the subgrade as may be directed.

(C) Where the nature of the material encountered or the safety of the adjacent structure render it necessary, the Contractor may resort to the use of steel sheet piling with prestressed bracing or the Contractor may underpin the structure or buildings.

(D) Other sheeting systems may be permitted upon approval of the Department of Design and Construction. (Trench Boxes will not be permitted for use in trenches and excavations that exceed twelve (12) feet in depth. (See **Subsection 40.05.4(E)**.))

(E) In general, sheeting and bracing in trenches and excavations shall be designed and installed so that the sheeting shall not be braced or blocked against any part of the new structure, or manholes, or chambers. When conditions warrant, bracing against such structures may be permitted following the approval of drawings prepared and submitted by a Professional Engineer licensed in the State of New York, showing the assumed design loads and stresses, and details of such bracing.

(F) If, in the opinion of the Engineer, any of the approved temporary or permanent supporting structures are inadequate or unsuitable for the actual conditions in the field, the Engineer may direct the Contractor to strengthen the supporting structures at no additional cost to the City. The Contractor shall be responsible for the sufficiency of all temporary and permanent supporting structures whether or not directed by the Engineer to strengthen them.

(G) Unless otherwise specified in the plans or these specifications, the Contractor shall remove all sheeting and bracing throughout this project as per **Subsection 40.05.7**.

40.05.2 SHEETING LEFT IN PLACE

When sheeting is specifically shown on the plans or specifically described in the specifications or specifically ordered in writing by the Engineer to be left in place, it refers to all sheeting and bracing in trench excavations for water main pipe and sewer conduit including manholes, valves and chambers. Excavations for catch basins, basin connections, house services and other excavations not considered part of the trench excavation for water main pipe and sewer conduit shall have their sheeting and bracing removed entirely.

When sheeting is to be left in place, all elements such as rangers and braces, of the sheeting used, must be left in place, except for such temporary braces that require removal in order to make way for the structure. Where it is necessary to remove such temporary braces, the sheeting shall be rebraced in a manner approved by the Engineer; however, in no case shall the sheeting be braced against the side of the structure unless approved in writing by the Engineer. Where lagging and soldier beams are used, the soldier beams and all the rangers and braces shall also be left in place. Where steel sheeting is used, the rangers and braces shall also be left in place.

When sheeting is to be left in place, the Contractor shall cut sheeting at the elevations ordered in writing by the Engineer; however, in general such cutoffs shall not be less than four (4) feet below the final

grade. Timber sheeting shall be cut off by sawing. Steel sheeting or soldier beams shall be cut off by burning. Breaking off of sheeting will not be permitted. The Contractor shall remove from the trench and away from the site of work, to the Contractor's own place of disposal, all cut sheeting and soldier beams together with all rangers, lagging and braces above the ordered elevation of cut. Where the removal of rangers and braces above the ordered elevation of cut is determined by the Engineer to render the sheeting system unstable, rangers and braces shall be placed prior to cutting at a level below the ordered elevation of cut and left in place.

(A) FOR SHEETING OF WATER MAIN TRENCHES AND EXCAVATIONS

Additional payment will be made for sheeting and bracing that is specifically shown on the plans or specifically described in the specifications or ordered in writing by the Engineer, to be left in place in water main trenches and excavations. Payment will be made in accordance with **Section 70.91**.

(B) FOR SHEETING OF SEWER TRENCHES AND EXCAVATIONS

No separate or additional payment will be made for sheeting and bracing that is specifically shown on the plans or specifically described in the specifications to be left in place in sewer trenches and excavations, regardless of the type used nor for the removal from the trench and excavation and the disposal away from the job site of the cut sheeting, bracing and rangers. The cost thereof shall be included in the prices bid for all sewer contract items of work, except when separate payment for sheeting and bracing is provided, in this case the cost shall be included therein. When sheeting is specifically ordered by the Engineer, to be left in place in sewer trenches and excavations, the cost for all labor, materials, cutting, removal, disposal, insurance and work required to leave sheeting in place shall be determine in accordance with **Articles 25 and 26** of the Contract.

40.05.3 MATERIALS

(A) Timber sheeting and bracing shall be of new or acceptable used timber free from injurious defects.

(B) Steel soldier beams shall comply with the requirements of **Section 23.05 - Structural, Reinforcing And Miscellaneous Steel**, except that approved used material will be permitted. Steel sheet piling shall comply with the requirements of **Section 24.01 - Steel Sheeting**, except that approved used materials will be permitted. Timber and lumber for bracing, shoring, fencing, bridging, and decking shall conform to the requirements of **Section 23.06 - Timber And Lumber**. Steel used for sheeting systems or for any other purposes herein shall conform to the requirements of the ASTM A36 and all other applicable requirements of ASTM.

(C) Steel Plates for use as sheeting will be permitted provided that they are properly installed and supported. The use of steel bracing frames which partially support the steel plates will be permitted up to a depth of twelve (12) feet. The use of steel plates in conjunction with trench boxes will not be permitted (trench boxes can not be considered as steel bracing frames).

(D) Steel Sheeting shall conform to the requirements of **Section 24.01** and shall be installed with continuous interlock.

40.05.4 CONSTRUCTION METHODS

(A) GENERAL - Timber sheeting and bracing and other sheeting systems shall be of sufficient dimensions and strength, and steel sheeting shall be of sufficient type, size and weight, to support adequately the sides of the trenches and excavations and insure the safety of adjacent structures and shall be installed in accordance with the approved sheeting details. The Contractor shall be solely responsible for the adequacy and sufficiency of all sheeting and bracing used.

(B) SHEETING - Unless otherwise specified, timber sheeting and bracing shall be driven or placed ahead of the excavation in such a manner as to prevent the loss or slippage of ground in order to

safeguard adjacent surface and subsurface structures. The sheeting shall be driven to adequate depth below subgrade. As the work progresses, any voids back of the sheeting shall be filled and compacted in accordance with **Section 40.06** and as directed by the Engineer.

(C) Sheeting can be used as forms for concrete work. Whenever sheeting is used as formwork as specified or approved by the Engineer only timber sheeting will be permitted unless otherwise approved or specified in writing by the Engineer. When sheeting is used as formwork, an approved protection shall be placed between the sheeting, bracing or soldier beams and the concrete. In addition, when sheeting is used as formwork for any structure or portion thereof, the thickness of that structure or portion of such structure shall be increased be three (3) inches beyond the original neat line of such structure or portion thereof. In no case shall the sheeting, soldier beams or other bracing encroach upon the original neat line of the structure. In such instances when sheeting, soldier beams or other bracing is found to encroach upon the neat line of the structure, the Engineer shall direct the Contractor to remove such sheeting, soldier beams or other braces and redrive and/or replace the sheeting, soldier beams or other braces outside the neat line of the structure. All sheeting used as formwork shall be removed.

(D) All open cuts shall be excavated with vertical sides and properly supported with close sheeting and bracing in conformity with the requirements of **Section 40.03 - Earth Excavation** and with 23 NYCRR - "Protection of Persons Employed in Construction and Demolition Work" and 16 NYCRR Part 753 - "Protection of Underground Facilities" of the State of New York, Department of Labor, Board of Standards and Appeals.

(E) The Contractor is advised that trench boxes will be permitted for use as a sheeting system provided that the depth of trench does not exceed twelve (12) feet. The use of trench boxes to partially sheet trenches that are greater than twelve (12) feet in depth, will be strictly prohibited.

Should trench boxes meeting the above requirements be utilized, the trench will not have to be sheeted completely to subgrade. The trench box will be permitted to "hang up" to a maximum of two (2) feet above subgrade provided that the existing soil in the area of the subgrade can "stand up" on its own without sheeting. Should running ground be encountered or should the soil in the subgrade area begin to slough off, the Contractor will be required to extend the trench box to subgrade. The Engineer shall always maintain the right to order the Contractor to lower the trench box to subgrade as required.

No deductions will be made from any payment for not sheeting the bottom two (2) feet of trench if approved by the Engineer and no additional payment will be made should the Contractor be directed to sheet completely to subgrade.

All sheeting and bracing drawings submitted for approval which indicate trench boxes must be designed for the full depth of trench (to subgrade) and shall show the trench box extending to subgrade.

(F) SLOPED SIDES OF TRENCHES OR EXCAVATIONS - Where the Contractor requests permission not to sheet a trench or excavation, and offers to slope the sides of such trench or excavation in accordance with OSHA Regulations in lieu of such sheeting, the Contractor's request shall be reviewed by the Engineer.

If the Engineer deems such sloping to be acceptable the Engineer shall so notify the Contractor in writing.

Pavement excavation and restoration requirements shall be governed by the width of the trench measured at the bottom of the pavement foundation. Pavement excavation and restoration in excess of those required in connection with standard trench excavation, as specified, shall not be paid for.

In those cases where the Contractor does not request permission to side slope, but the Engineer determines that side sloping is in the best interests of the City, the Engineer shall order the Contractor to proceed using such side sloping. In these cases, the additional pavement excavation and restoration will be paid for at the appropriate bid unit price.

In both of the above cases it shall be presumed that side sloping a trench or excavation is done to obtain a lower cost for the work to be performed. The City shall, therefore, take an appropriate credit to cover the difference in overall costs resulting from the use of side sloping instead of timber sheeting.

(G) SHEETING METHODS

The following methods of sheeting trenches are acceptable:

(a) Vertical Wood Sheeting
(b) Steel Soldier Beams with Horizontal Wood Lagging
(c) Interlocking Steel Sheeting
(d) Trench Boxes for trench depths up to twelve (12) feet
(e) Steel Soldier Beams with Steel Plates continually supported
(f) Steel Frames with Steel Plates for trench depths up to twelve (12) feet
(g) Krings and Icon Type Sheeting Frames and Plates

40.05.5 SHOP DRAWINGS

The Contractor will be required to submit Shop Drawings detailing the sheeting system whenever the depth of cut exceeds five (5) feet.

(A) Before commencing any excavating operation the Contractor shall have approved drawings from the Department of Design and Construction for all types of sheeting and bracing systems, cofferdams, shoring, underpinning, bridging, decking and all other temporary or permanent supporting structures required.

(B) The Contractor shall submit for approval five (5) copies of sheeting and bracing drawings, and other structures (i.e. decking, bridging) drawings that the Contractor proposes to use for the work.

(C) The Contractor shall have these drawings prepared by a Licensed Professional Engineer, currently registered in the State of New York. Such drawings shall be submitted together with design calculations, references, tables and charts. Both drawings and design calculations shall bear the imprint of the Licensed Professional Engineer's seal and signature.

(D) In designing the sheeting stated above, the Contractor's Engineer shall take note of the standard minimum load diagram requirements for Watertight and Non-Watertight sheeting structures. (See Sewer Design Standards.)

(E) The following notes shall be required on all sheeting detail submissions:

(1) If the actual surcharge is in excess of three hundred thirty (330) pounds per square foot the Contractor shall adequately reinforce the sheeting and bracing as required at no additional cost to the City.

(2) Maximum pilot cut shall be five (5) feet.

The sheeting and bracing drawings shall also include but not be limited to the following: the density of the soil, the internal angle of friction of the soil, the stress grade and type of lumber, the allowable steel stresses and the sequence of construction operation where required.

(F) Shop drawings of sheeting, bracing and other structures used by the Contractor shall be signed by and carry the seal of a Professional Engineer licensed in the State of New York. These drawings shall be submitted together with proper design computations bearing the same seal and signature. Shop drawings shall be on sheets twenty-seven (27) inches by forty (40) inches with a one-half (1/2) inch marginal space on three (3) sides and a two (2) inch marginal space for binding on the left side.

Shop drawings shall be numbered consecutively and shall accurately and distinctly present the following:

(1) All working and erection dimensions.
(2) Arrangement and sectional views.
(3) Necessary details, including complete information for making connections between work under this contract and work under other contracts.
(4) Kinds of materials.

(G) Each shop drawing shall be dated and contain:

(1) The name of this project and this contract number.
(2) The description name of classified contract item number or numbers under which it is or they are required.
(3) The locations or points at which the sheeting is to be installed in the work.

(H) All sheeting submissions shall reflect the means and methods chosen by the Contractor and approved by the Engineer. Whenever steel sheeting systems (including trench boxes, frames and plates, etc.) are submitted which would render the crossing of Utilities (i.e. water mains and sewers) impossible the Contractor shall also submit, for approval, a system which can be utilized to permit such crossings (i.e. wood sheeting).

(I) The submission of multiple sheeting systems shall be kept to a minimum. Whenever the Contractor submits multiple systems they must be accompanied with a Location Plan shop drawing to indicate the exact location where these various systems are to be installed. Since the approval of multiple systems will delay the sheeting approval process the Contractor is requested to submit a schedule indicating the time frame that these systems are required. In addition the Contractor will be required to install these multiple systems at the locations indicated on the submitted Location Plan. Should the Contractor request to change the sheeting system at any particular location the Contractor will be required to resubmit the sheeting drawing, for approval, even though the revised sheeting system may have been approved at another location within the project area. The Contractor is reminded that the approval time for any given sheeting system may require up to four (4) weeks.

40.05.6 DESIGN CRITERIA

The following criteria shall be used in calculating the required sheeting, bracing and/or decking systems.

(A) All compression members (struts) shall be designed with a factor of safety of two (2.0). The factor of safety of two (2.0) shall be a value above and beyond the allowable value for compressive stresses for steel as designated in the "AISC Manual of Steel Construction", and for wood as designated in the "National Design Specification for Stress-Grade Lumber and its Fastening". All other allowable stresses (not including compression members) may be increased by thirty-three and one-third (33-1/3) percent where sheeting and bracing is deemed a temporary structure.

(B) A factor of safety shall be used to determine the minimum embedment for sheeting as follows:

Vertical Timber - 15%
Soldier Beams - 20%
Steel Sheeting - 30%

(C) Embedment shall be calculated in accordance with the procedures and standard minimum load diagrams specified herein. The maximum allowable embedment for vertical timber sheeting shall not exceed three feet six inches (3'-6"). The minimum embedment shall be two (2) feet.

(D) The Contractor is advised that the maximum allowable bending stress (F_b) for all timber members shall not exceed one thousand seven hundred fifty (1,750) pounds per square inch. If the Contractor

elects to use a bending stress higher than F_b = 1,750-psi, written certification of bending stress test results shall be submitted to the Engineer prior to use of such material in construction.

(E) Where it is anticipated that heavier crane or equipment loads will fall within the influence line of the trench, design loads shall be increased accordingly.

(F) The Contractor shall compute and include in the Contractor's submission of drawings and calculations the following:

(1) Maximum bending stress
(2) Maximum horizontal shear in wale
(3) Compression perpendicular to grain
(4) Maximum vertical shear stress

(G) DECKING

(1) Unless otherwise specified in the contract documents or approved in writing by the Engineer, the minimum live load on decking shall be AASHTO HS20-44 or Contractor's equipment or heaviest truck loading (i.e. concrete trucks) whichever is greater plus an impact factor of thirty-three (33) percent.

(2) Unless otherwise approved, timber mats shall extend a minimum of three (3) feet from sheeting line on either side of trench.

(3) Unless otherwise approved, a minimum one thousand (1,000) pounds per square foot surcharge load shall be used for sheeting below decking.

(H) Maximum trench widths shown on sheeting details shall not exceed those allowed by the standards or specifications.

(I) The Contractor shall provide an individual cross-sectional sheeting (trench) detail for each size water main pipe and sewer conduit to be constructed unless permission to do otherwise is granted.

(J) Where the water table lies above the subgrade of trench and a well point or deep well dewatering system is not used, the Contractor shall include the effect of hydrostatic loading in calculations for both watertight and non-watertight sheeting.

(K) Sheeting details shall accurately depict actual field operations. The Contractor shall be restricted to a maximum five (5) feet deep pilot cut and all details must reflect this. Additional braces and wales may be required to install sheeting due to the five (5) feet maximum pilot cut restriction. The Contractor shall not assume that additional pilot cut depths will be allowed.

40.05.7 REMOVAL OF SHEETING

All sheeting design and requirements shall be in strict conformance with this section and all appropriate Addenda to the specifications.

Unless otherwise specified in the plans or these specifications, the Contractor shall remove all sheeting and bracing throughout this project.

(A) The sheeting shall be removed in lifts during the backfilling operation in order to permit proper placement and compaction of material against the structure and the earth bank. This work shall be accomplished in conjunction with the removal of wales and braces. In no case shall the lifts for sheeting exceed the specified or otherwise approved depth of compaction layer.

(B) The Contractor shall submit to the Engineer, for approval, the Contractor's method for installation and removal of sheeting and the method for backfilling the trench. The submission shall also specify if there are any location(s) where sheeting cannot be removed and detail the reasons why the sheeting cannot be removed. The submission shall be signed by and carry the seal of a New York State Licensed Professional Engineer. These methods must be strictly adhered to.

(C) The Contractor is advised that the Contractor will be responsible for, and shall solely at the Contractor's own expense, repair, replace and/or relocate all City owned utilities that are damaged and/or disturbed due to the Contractor's removal of sheeting operation.

(D) If the Contractor is required to leave the sheeting system in place in order to protect City owned utility crossings and structures, payment will be made in accordance with **Subsection 40.05.2(A)** and **Subsection 40.05.2(B).**

(E) This section shall not be construed to relieve the Contractor of the Contractor's obligation under the contract to maintain, protect and support (temporarily and permanently) all City owned utilities within the influence lines of the excavated trenches. The Contractor in accordance with the standards of the agencies having jurisdiction thereof shall perform such maintenance, protection and support.

(F) The cost of maintenance, protection and support (temporarily and permanently) of City owned utilities shall be included in the prices bid for all items for which there are bid prices.

(G) If a soldier beam and lagging sheeting system is utilized then all parts of the system (i.e. soldier beams, bracing, wales and lagging) must be removed.

(H) There shall be no additional payment made for repairing, replacing and/or relocating City owned utilities that may be damaged and disturbed due to the Contractor's removal of sheeting operation, or for work performed by the Contractor as directed in **Subsection 40.05.7(E)** above.

40.05.8 COST INCLUDED

There shall be no separate payment for the sheeting and bracing of trenches and excavation of water mains larger than 20-inches in diameter and appurtenances thereto including valve chambers, regulator chambers, etc.; and for the sheeting and bracing of trenches and excavation of all sewer conduits and appurtenances thereto including manholes, chambers, catch basins, etc. The cost of all labor, material, plant, equipment and insurance necessary or required to furnish and install all timber and steel sheeting together with all necessary rangers, bracing, lagging, soldier beams, etc., excavation for the placing of sheeting, backfill and compaction behind sheeting to prevent loss of ground, cut off of sheeting as specified, together with all work incidental thereto, all in accordance with the plans and specifications and as directed by the Engineer, shall be deemed included in the prices bid for the respective contract items.

40.05.9 SEPARATE PAYMENT

Separate payment will be made for the sheeting of water mains 20-inches and smaller in diameter. Payment will be made in accordance with **Section 70.91**.

(NO TEXT THIS PAGE)

SECTION 70.91
SHEETING

70.91.1 DESCRIPTION

This section describes the use of Sheeting in water main trenches and excavations only.

70.91.2 MATERIALS

All sheeting materials shall comply with **Subsection 40.05.3**.

70.91.3 CONSTRUCTION METHODS

To prevent injury to workmen or to avoid damaging existing water pipes, structures, and pavements and their foundations through caving or sliding of the banks of a trench or other excavation, protection shall be provided for all excavation work except where a determination is made by the Contractor, the Engineer or the Engineer's inspector at the work site that the nature of the excavation does not require protection.

Excavation protection, when required, shall be provided in accordance with the requirements of:

(1) U.S. Occupational Safety and Health Administration (OSHA) Construction Safety and Health Regulations, Part No. 1926, Subpart P;

(2) 23 NYCRR, Subpart 23-4 – Excavation Operations;

(3) 16 NYCRR, Part 753 – Protection of Underground Facilities;

(4) Special requirements detailed below.

NOTE: Whenever an interpretation difference exists as to selecting the applicable requirements, that of the most stringent one shall govern.

(A) SPECIAL REQUIREMENTS

Unless specifically ordered otherwise by the Engineer or the Engineer's inspector at the work site, the following Special Requirements shall be adhered to:

(a) Trenches For Water Main Pipe 12-Inch In Diameter And Less

In general, such trenches shall not be sheeted since, with the laying depths used, the trench bottoms will be less than five (5) feet below the ground surface. However, removal of existing pipe, or connections to existing pipe may, in some instances result in trench depths of five (5) feet or greater. In such cases, at a minimum, sheeting will be required. If sheeting is required, it shall be of sufficient length so that all ingress and egress is within the sheeted area, and shall extend at least 2 feet beyond all work locations and access points. If workmen are required to transit between sheeted areas, they must exit the trench.

If, in the opinion of the Engineer or the Engineer's inspector at the work site, sheeting is required, for whatever reason, in any trench or other excavation, the Contractor shall install it.

(b) Trenches For Water Main Pipe 16-Inch and 20-Inch In Diameter

All such trenches shall be sheeted, regardless of the depth of the trench.

(c) Trenches For Water Main Pipe Larger Than 20-Inch In Diameter; And Excavations For Chambers And Manholes

All such trenches shall be sheeted, regardless of the depth of the trench.

(d) Detailed Requirements As To Type And Size Of Sheeting

Unless specifically noted otherwise on the contract drawings or in these specifications, the sheeting required in paragraphs (a), (b), and (c) above, above, shall be furnished and installed in full compliance with the requirements of Section 1926.652 of the OSHA Regulations.

The size and spacing of sheeting, stringers, and cross bracing required for various soil conditions shall meet the latest OSHA Regulation requirements.

(B) SUBSTITUTION FOR TIMBER SHEETING

Any substitution for timber sheeting and bracing such as a self-supporting movable shield of timber or metal, etc., must be designed by and stamped with the seal of a Professional Engineer, licensed to practice in the State of New York, and must be approved by the Engineer in writing prior to its being used on the job. Submittal of proposed substitutions shall be made by the Contractor at least four (4) weeks prior to their scheduled use to allow for proper review and approval of it by the Engineer.

(C) SHEETING LEFT IN PLACE

Where the sheeting is ordered to be left in place, the full amount of the lumber so left in place will be paid for at fifty percent (50%) of the market value thereof, without any allowance for the cost of delivery or placing in the work. Sheeting left in place shall be cut off in accordance with **Subsection 40.05.2**.

When sheeting is ordered to be left in place, the cost of all work required for the cutting, removal and disposal of the cut sheeting shall be deemed included in the fifty percent (50%) compensation paid above.

70.91.4 MEASUREMENT

The quantity of sheeting incorporated into the work, complete, as shown, specified or required shall be computed as twice the depth of trench times the length of the sheeted trench. The depth of trench or excavation to be sheeted shall be from the ground surface to the bottom of the pipe. In those cases where a special foundation, such as a broken stone bed or a concrete cradle or mat is required, the depth of trench or excavation to be sheeted shall be from the ground surface to the bottom of such special foundation.

70.91.5 PRICE TO COVER

Payment for sheeting of trenches for water main pipe 12-inch in diameter and less shall be made per square foot under bid Item No. 70.91SW12 - FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 12-INCH IN DIAMETER AND LESS contained in the bid schedule.

Payment for sheeting of trenches for water main pipe 16-Inch and 20-inch in diameter shall be made per square foot under bid Item No. 70.91SW20 - FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 20-INCH IN DIAMETER contained in the bid schedule. Where there is no bid item for such sheeting, because the quantities of such pipe to be installed are very small, or the work involves connecting smaller size pipe to 16-Inch and 20-inch mains or larger, payment for such sheeting will be made at the unit price bid for Item No. 70.91SW12 - FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 12-INCH IN DIAMETER AND LESS.

The Contractor's attention is directed to the fact that the Contractor's bid price for sheeting covers the cost of extra earth excavation and other extra costs involved in laying the pipe, such as but not limited to, lesser pipe footage being installed per day, etc.

All of the above provisions are intended to apply to those instances where sheeting is required in a trench in order to lay pipe. In such instances a wider trench is required (to accommodate the sheeting) than when pipe is laid in unsheeted trenches.

When sheeting is provided in portions of a trench (to protect men inserting taps, etc.) that was originally excavated for laying a water main, and when such trench was not sheeted at the time the water main was laid, payment shall be made only for the amount of sheeting actually placed. In all such cases the payment lines for pavement excavation, pavement restoration, and satisfactory backfill shall be those specified for unsheeted trenches.

Where the OSHA Regulations do not require sheeting, but where the Contractor, for the Contractor's own convenience, installs a more limited type of trench support (stay bracing, etc.) such limited type of trench support will not be paid for. The cost of such limited trench support shall be deemed included in the various unit prices bid.

All sheeting that is to be paid for must meet all requirements of the OSHA Regulations.

70.91.6 NO SEPARATE PAYMENT

No separate payment will be made for the sheeting of water main trenches for water mains larger than 20-inches in diameter, the costs thereof shall be deemed included in the prices bid for laying these mains. No payment shall be made for sheeting at chambers and manholes, but payment thereof will be deemed to be included in the various items bid for constructing the chambers and manholes.

Payment for Furnishing And Placing Sheeting And Bracing In Trench For Water Main Pipe will be made under the Item Number as calculated below:

The Item Numbers for Furnishing And Placing Sheeting And Bracing In Trench For Water Main Pipe have nine characters. (The decimal point is considered a character, the third character.)

(1) The first five characters shall define Furnishing And Placing Sheeting And Bracing In Trench For Water Main Pipe:

70.91

(2) The sixth and seventh characters shall define Furnishing And Placing Sheeting And Bracing In Trench For Water Main Pipe:

SW - Furnishing And Placing Sheeting And Bracing In Trench For Water Main Pipe

(3) The eighth and ninth characters shall define the Size of Water Main Pipe That Trench Sheeting will be provided for:

12 - 12-Inch In Diameter And Less
20 16-Inch and 20-Inch In Diameter

(4) The Item Numbers together with Description and Pay Unit as provided in the Bid Schedule are provided below:

Item No.	Description	Pay Unit
70.91SW12	FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 12-INCH IN DIAMETER AND LESS	S.F.
70.91SW20	FURNISHING AND PLACING SHEETING AND BRACING IN TRENCH FOR WATER MAIN PIPE 16-INCH AND 20-INCH IN DIAMETER	S.F.

(NO TEXT THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-001

Title: **UV CURED-IN-PLACE-PIPE (CIPP) LINING METHOD**

Prepared:	Approved:
1/12/2017	1/12/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 2/20/17.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

- **ATTACHMENT 1:** Revised Section 50.71 - RECONSTRUCTION OF EXISTING SEWERS USING D.E.P. APPROVED CURED-IN-PLACE-PIPE (CIPP) LINING METHOD
  Pages A1-1 through A1-9

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARD SEWER AND WATER MAIN SPECIFICATIONS, DATED 7/1/14:

All references contained below are to the New York City Department of Environmental Protection Standard Sewer and Water Main Specifications, Dated July 1, 2014. Said Standard Sewer and Water Main Specifications are hereby revised as follows:

a) **Refer** to Pages V-52 through V-59, Section 50.71 – RECONSTRUCTION OF EXISTING SEWERS USING D.E.P. APPROVED CURED-IN-PLACE-PIPE (CIPP) LINING METHOD;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 1 (9 pages).

(NO TEXT THIS PAGE)

CURED-IN-PLACE-PIPE (CIPP) LINING METHOD

50.71.1 INTENT

It is the intent of this section to provide for the reconstruction of existing sewers by the installation of a resin-impregnated flexible tube that is inflated within the existing conduit to form a hard, impermeable, corrosion resistant pipe within a pipe. When cured, the cured-in-place-pipe (CIPP) will be formed to the original conduit.

50.71.2 REQUIREMENTS

(A) DESCRIPTION OF WORK

Unless otherwise specified in the contract, the Contractor shall use a Department of Environmental Protection (DEP) approved cured-in-place-pipe lining method on all existing sewers shown, specified, or ordered to be reconstructed under this contract by use of an approved lining method. All such work shall comply with the terms of this specification and with the manufacturer's standards set forth for the lining method(s) selected by the Contractor.

Under this method the Contractor shall reconstruct existing sewers by the insertion of either a flexible polyester felt or glass fiber lining tube that has been saturated with either a thermosetting or photosetting resin. The liner shall be inserted into the existing sewer either by direct inversion (ASTM F1216) using a head of water or air, or by pulling the tube into place by winching and then inflating it by inversion of a calibration hose (ASTM F1743). The thermosetting resin shall then be cured by either circulating hot water through the tube or by circulating hot air (a mixture of steam and air), or by circulating steam to cure the resin into a hard impermeable pipe. The photo-initiated resin shall be exposed to an ultraviolet light source to cure the resin into a hard impermeable pipe.

The Contractor shall make all investigations of the existing sewers to be reconstructed and shall determine and select the most effective approved lining method(s) appropriate for installation in the existing sewers to be reconstructed. The Contractor shall be responsible for the successful completion of all work required herein; failure of the Contractor's selected lining method(s) to be satisfactorily installed in the existing sewers shall not relieve the Contractor of the Contractor's responsibility to provide satisfactorily reconstructed sewers.

Any cost associated with the removal of the unsatisfactorily installed liner and the subsequent, satisfactory reinstallation of an approved liner shall be borne solely by the Contractor, and the Contractor shall not make any claim against the City for this additional required work.

Once installed, the liner shall extend from manhole to manhole in a continuous tight fitting watertight pipe-within-a-pipe, and be chemically resistant to sewage gases and materials. During the warranty period any defects that might affect the integrity or strength of the liner shall be immediately repaired or replaced by the Contractor, at the Contractor's expense, pursuant to the manufacturer's recommendations, and to the satisfaction of the Engineer.

(B) REFERENCE SPECIFICATIONS AND STANDARDS

The American Society for Testing and Materials Standard Specifications ASTM C581, D638, D790, D2990, D5813, F1216, F1743, and F2019, and the manufacturer's standards are hereby made a part of this specification.

(C) LINER SIZE AND LENGTH

The liner shall be fabricated to a size that when installed will neatly fit the internal circumference of the sewer to be lined. The liner thickness shall be designed to adequately resist all external pressures and conditions (e.g. deflection, ring bending, buckling and minimum stiffness). The length of the liner shall be

that deemed necessary to effectively span the distance and carry out the insertion and seal of the liner at the inlet and outlet manholes. The Contractor shall verify the lengths in the field before cutting the liner to length. Prior to the start of work the Contractor will be required to submit design calculations for wall thickness to the Engineer. When UV-cured liners are used, the Contractor must also submit the manufacturer's product specific data regarding the glass fiber tube, the resin and initiator cocktail system and the necessary manufacturer installation reference material detailing the type of light source and the speed in which it will be advanced to insure proper curing.
Allowance for circumferential and longitudinal stretching of the liner during installation shall be made as per the manufacturer's standards for the approved method of lining chosen. Under no circumstances shall the finished wall thickness of liner be less than six (6) millimeters in thickness.

(D) DESIGN PARAMETERS - The following design parameters shall be used in the design of pipe liners in addition to the manufacturer's standards:

(1)	Ovality of Existing Pipe	2% Minimum
(2)	Existing Pipe Condition	Fully Deteriorated
(3)	Modulus of Soil Reaction	700-psi Minimum
(4)	Factor of Safety Against Buckling	2 Minimum
(5)	Allowable Deflection	5% Maximum
(6)	Ratio of Pipe to Soil Strength	10% Minimum
(7)	Live Load	AASHTO HS20-44 Loading under Roadways AASHTO E-80 Loading under Railroads
(8)	Soil Unit Weight	120-pcf Minimum (If no Boring Data is available in vicinity.)
(9)	Creep Reduction Factor	50% Maximum

(E) LINER MATERIAL - The Contractor shall furnish, prior to use of the lining materials, satisfactory written guarantee of the Contractor's compliance with the liner manufacturer's standards for all materials (polyester felt tubing, including the polyurethane covered felt and the thermosetting resin or glass fiber tubing soaked in photosetting resin) and techniques being used in the method.

Prior to the start of work the Contractor will be required to submit to the Engineer the types of resins and the resultant cure schedules for each length and size of sewer to be lined. The finished liner shall incorporate thermosetting materials that will withstand the corrosive effects of the normal existing effluents.

(F) SAFETY - The Contractor shall carry out the Contractor's operations in strict accordance with all OSHA and manufacturer's safety requirements. Emphasis shall be placed upon safety requirements for entering confined spaces and working with hot water, steam, or resins that may cause fumes.
The Contractor shall erect such signs and other devices as are necessary for the safety of the work site and shall secure the site and conform all work to the safety requirements of all pertinent regulatory agencies.

(G) AIR QUALITY - The Contractor is advised that all liner installation work shall be carried out in full compliance with all City, State, and Federal laws, rules, and regulations regarding Air Quality and Safety. The contractor shall take all necessary precautions to minimize the release of styrene or other VOC emissions and mitigate odors generated during set and the CIPP lining process. The Contractor shall also take all necessary precautions to prevent such odors from entering structures, businesses or other types of establishments, through service connections or other plumbing fixtures.

(H) FLOW BYPASSING - Prior to the start of work the Contractor will be required to submit a fluming/bypass-pumping detail in accordance with **Subsection 10.13 - (3) Existing Flow**. The Contractor shall provide for the diversion of flow of existing sewers at existing upstream manholes (if available) and pump the flow into an existing downstream manhole. The pumps and bypass lines shall

be of adequate capacity and size to handle the flow. The proposed bypassing system shall be submitted to the Engineer for approval and no work shall commence until such approval is granted.

(I) TELEVISION INSPECTION PRIOR TO INSTALLATION - All bidders are advised that a digital audio-visual inspection was made of the sewers to be reconstructed and that this recording (the "DEP recording") is available for review prior to bid opening. All prospective bidders are urged to view this recording in order to assess the suitability of the lining methods for use on this project. The City of New York does not guarantee the successful use of any particular method on this project and the Contractor shall utilize the Contractor's judgment as to the effective use of the method(s) the Contractor selects.

The Contractor will also be required to perform another television inspection and digital audio-visual recording of the sewer a maximum of seven (7) days prior to the setting up of the liner insertion equipment at the site. This inspection will be performed, utilizing a radial eye camera, to determine the latest condition of the sewer and to accurately identify the location of active service connections. Should the results of this television inspection show a condition different than that shown on the DEP recording, the Contractor shall immediately notify the Engineer.

For each section to be lined, the Contractor shall certify in writing that the DEP approved method the Contractor intends to use is suitable.

(J) CLEANING - The Contractor shall furnish all labor, materials and equipment and shall do all work necessary to remove and dispose of all debris, sediment, silt, refuse, timber, roots, and materials of all kinds which can be removed by conventional non-excavation type pipe cleaning equipment located in the existing sewers and manholes. The Contractor shall immediately notify the Engineer if such debris, etc., cannot be removed by conventional non-excavation type pipe cleaning equipment.

Protruding service connections shall be removed and paid for consistent with **Section 52.51**.

(K) SERVICE CONNECTIONS - The Contractor shall be required to determine which service connections are active and shall be responsible for controlling (or maintaining) the flow for each active service connection along the line of the sewer to be rehabilitated. Where necessary, the flow from an active service connection shall be bypassed to a manhole downstream of the proposed work by means of pumping from the trap located in the basement of the affected building. However, should such bypassing be judged unfeasible by the Engineer, the Contractor shall excavate to the service connection outside the building area (sidewalk or roadway as determined by the Engineer) and bypass the connection from this point. The pump and bypass line for each service connection shall be of adequate capacity and size to handle the flow.

Prior to the commencement of any work, the Contractor shall make all necessary investigations and prepare a plan for the controlling (or maintaining) of the flow and, where necessary, for the bypassing of active service connections. This plan shall be submitted to the Engineer for approval and no work shall commence until such approval is granted.

(L) EQUIPMENT SPECIFICATION - The Contractor shall provide suitable temperature and pressure gauges in accordance with the manufacturer's standards and specifications. High-pressure steam hoses and fittings have to be rated in accordance with the steam generator used. Thermocouples are to be marked for each fluid to be conveyed: RED-steam; BLUE-water; GREEN-air. The pulling winch shall be equipped with a tension gauge (Type-Martin Decker or Approved Equal) - smooth running and variable speed. The cutting device shall be a Gulectron type or approved equal remote monitored device when used inside the lined pipe.

The Contractor shall prepare and inspect all necessary tools and any spare parts that are required for equipment that suffer frequent breakdowns, and shall ensure that said tools and spare parts are available at the site. Supporting equipment, such as pumps and generators, shall be provided at the site in the event there is a fluid surge and pumping is required on an emergency basis. The Contractor shall also prepare and make operable all necessary communication equipment for the Contractor's field crew.

(M) INSTALLATION OF LINER - Prior to the installation of liner, the Contractor shall fully comply with **Subsections 50.71.2(C) through 50.71.2(L)**, inclusively, and with any additional requirements set forth in the specific provisions applicable to the respective lining methods. The Contractor shall not proceed with the installation of liner until the Engineer, in writing, certifies such compliance and directs the Contractor to proceed with the lining installation. The approved liner shall be installed pursuant to the specific provisions set forth for the selected lining method. If any problem occurs during the installation operation the Contractor shall investigate with a television camera from the remote manhole.

(N) PRELIMINARY TELEVISION INSPECTION OF INSTALLED LINER - After the liner is sufficiently cool (below one hundred degrees Fahrenheit (100°F)) and before opening the service connections, a preliminary television inspection and digital audio-visual recording of the newly installed liner shall be performed to determine if the liner is properly installed.

(O) SERVICE CONNECTIONS - After the liner has been installed, the Contractor shall re-open all existing active service connections and those inactive connections ordered by the Engineer. These service connections shall be re-opened and paid for consistent with **Section 52.61**.

(P) FINAL TELEVISION INSPECTION AFTER INSTALLATION - A final television inspection and digital audio-visual recording of the newly lined sewer including the restored service connections shall be performed immediately after work is completed. Should the results of this final inspection reveal any defects, as determined by the Engineer, the Contractor will be required to repair or replace these defects as ordered by the Engineer at the sole expense of the Contractor.

Payment for this final television inspection will be made under Item No. 53.11DR - TELEVISION INSPECTION AND DIGITAL AUDIO-VISUAL RECORDING OF SEWERS.

(Q) WORK SCHEDULE - The Contractor shall be permitted to occupy the lane immediately above the sewer location and the parking lane immediately adjacent to the site of work unless otherwise specified. No further roadway or traffic restrictions shall be permitted.

50.71.3 INSTALLATION

(1) PREPARING AND INSERTING THE LINER - The Contractor shall designate a location where the uncured resin in the original containers and the un-impregnated liner will be impregnated prior to installation. The Contractor shall allow the Engineer and/or the Engineer's representative to inspect the materials and chemical impregnation "wet out" procedure. A resin and catalyst system compatible with the requirement of this method shall be used. The quantities of the liquid thermosetting materials inserted into the lining tube shall be as per manufacturer's standards so as to fully saturate the liner material and provide the lining thickness specified. The contractor shall protect, store and handle materials during transportation and delivery, while stored on-site and during installation following Manufacturer's recommendations. Liners impregnated with thermo-initiated resins shall be stored within the proper temperature range and liners impregnated with photo-initiated resins shall not be exposed to UV-light sources, to insure no premature curing occurs.

Prior to installation of liner, the downstream sewer manhole adjacent to the sewer section to be lined shall be plugged.

The chemical impregnated liner material shall be inserted into the sewer line being reconstructed through the existing manhole by either the direct inversion method or by the pull-in-place method, as recommended by the manufacturer. The head used to extend the liner tube shall be sufficient enough to fully extend the tube both circumferentially and longitudinally. The head used will fall within the manufacturer's guidelines to insure that a proper finished thickness is achieved and that the liner fit snug to the existing pipe wall producing dimples at service connections and flared ends at the entrance and exit manholes.

Winch cable shall be equipped with a tension gauge to measure tension during pull through.

Inflation of liners and heat source method used shall be accomplished in accordance with manufacturer's standards and specifications.

Curing temperatures and pressures shall be monitored so as not to overstress the liner and cause damage or failure of the liner prior to cure.

The use of a lubricant is recommended and such lubricant shall be compatible with liner and resin.

The Contractor will be required to monitor and remove styrene to acceptable levels during the inflation and curing processes. An activated carbon filtration system shall be employed to remove styrene from both the process air flow and condensed steam, prior to release into the air or an adjacent or downstream sanitary or combined sewer manhole.

(2) CURING OF LINER - After inflation or inversion is completed, the Contractor shall supply a suitable heat source. The equipment shall be capable of delivering steam or hot water to the far end of the liner to uniformly raise the temperature in the entire liner above the temperature required to initiate and effect curing of the resin system. The temperature shall be determined by the resin/catalyst system employed. The heat source shall be fitted with suitable monitors to gauge the temperature and pressure of the incoming and outgoing heat exchanger circulating heating medium. Thermocouples shall be placed between the liner and the invert at each manhole so as to determine and record the temperature of the liner and time of exotherm.Initial cure shall be deemed to be completed when inspection of the exposed portions of the liner show it to be hard and sound; and when temperature reading(s) at the interface of the liner with the host pipe indicate sufficient heating has occurred. The cure period shall be of a duration recommended by the resin manufacturer; modified for the site specific conditions at the time curing is affected. During this cure time, the temperature inside the liner will be continuously maintained in the range required.

Once the cure is complete, the Contractor shall cool the hardened liner to a temperature below one hundred degrees Fahrenheit (100°F) before relieving the internal pressure. Cool down shall be accomplished as recommended by the manufacturer. Care shall be taken in the release of the internal pressure so that a vacuum will not develop that could damage the newly installed liner.

For UV-light CIPP systems, the intensity and duration of exposure to the photo-initiator's required UV-light wavelength shall be as per the manufacturer's recommendations for the proposed size and thickness of tube, to insure that the liner has been cured completely. The UV-light source shall be fitted with multiple temperature sensors to insure that reaction temperatures stay within the Manufacturer's acceptable range and do not blister the interior liner. All lamps shall be monitored to insure that they are on and functioning properly. In the event that a lamp fails or the reaction temperatures fall below the Manufacturer's acceptable range during CIPP installation, the Contractor shall reduce the speed of the light source (increasing the exposure duration) by the Manufacturer's specified amount. The Manufacturer's recommended cooling phase shall be observed after the last lamp of the light source has been turned off. The finished lining shall be continuous over the entire length and be free from visual defects such as foreign inclusions, dry spots, pinholes and delamination. The lining shall be impervious and free of any leakage from the pipe to the surrounding ground or from the ground to the inside of the lined pipe.

If due to broken or misaligned pipe at the access manhole, the lining fails to make a tight seal, the Contractor shall apply a seal of a resin mixture compatible with the liner.

After the curing has been completed, any residual water and condensation that adheres to the inner wall of the liner shall be removed. This residual water shall be collected and pumped from the channel of the downstream manhole and circulated through a separate carbon filtration unit before discharge into a downstream sanitary or combined sewer manhole. In the case of lining a storm sewer section, the collected filtered residual water and process water shall not be discharged into the downstream manhole or stream, but discharged into a nearby sanitary manhole.

50.71.4 MEASUREMENT

The quantity to be measured for payment shall be the length of reconstructed sewer, accepted by the Engineer, measured horizontally along the centerline of the sewer from inside face of manhole to inside face of manhole.

50.71.5 PRICE TO COVER

The contract price for "RECONSTRUCTION OF EXISTING SEWERS, USING D.E.P. APPROVED CIPP LINING METHOD" shall be the unit price bid per linear foot for each size sewer reconstructed by a cured-in-place-pipe DEP approved lining method and shall cover the cost of all labor, materials, plant, equipment, samples, tests and insurance required or necessary to reconstruct the sewers of the sizes shown including the cleaning of the existing sewers using conventional non-excavation type pipe cleaning equipment; television inspection prior to installation; diversion of flow of existing sewers; controlling (or maintaining) the flow for all active service connections; necessary bypassing and pumping of the existing active service connections; repair of active service connections; all necessary excavation, backfilling and compaction; complete installation of the liner; preliminary television inspection of installed liner; temporary and permanent restoration of all disturbed sidewalk and pavement areas (unless items for temporary and permanent restoration are otherwise provided in the Bid Schedule); cleaning up; and furnishing and installing all other items necessary to complete this work and do all work incidental thereto, all in accordance with the plans and specifications and as directed by the Engineer.

50.71.6 SEPARATE PAYMENT

Payment for this final television inspection will be made under Item No. 53.11DR - TELEVISION INSPECTION AND DIGITAL AUDIO-VISUAL RECORDING OF SEWERS.

Payment for Reconstruction Of Existing Sewers Using D.E.P. Approved Cured-In-Place-Pipe (CIPP) Lining Method will be made under the Item Number as calculated below:

The Item Numbers for Reconstruction Of Existing Sewers Using D.E.P. Approved Cured-In-Place-Pipe (CIPP) Lining Method have eleven characters. (The decimal point is considered a character, the third character.)

(1) The first five characters shall define Reconstruction Of Existing Sewers Using D.E.P. Approved Cured-In-Place-Pipe (CIPP) Lining Method:

50.71

(2) The sixth character shall define the Type of Sewer Effluent:

S - Sanitary Sewer
M - Storm Sewer
C - Combined Sewer
I - Interceptor Sewer

(3) The seventh and eighth characters shall define either the Diameter of the Sewer for Existing Circular Sewers or the Width of the Sewer for Existing Horizontal Elliptical Sewers, Vertical Elliptical Sewers and Egg-Shaped Sewers. (The seventh and eighth characters representing the unit of inches for either the Diameter of the Sewer for Existing Circular Sewers or the Width of the Sewer for Existing Horizontal Elliptical Sewers, Vertical Elliptical Sewers and Egg-Shaped Sewers.) See examples below:

10 - 10"
30 - 30"

(4) The ninth character shall define the Shape of the Existing Sewer:

D - Circular (Diameter)

H - Horizontal Elliptical
V - Vertical Elliptical
E - Egg-Shaped
R - Rectangular

(5) The tenth and eleventh characters shall define either Circular or the Height of the Sewer for Existing Horizontal Elliptical Sewers, Vertical Elliptical Sewers and Egg-Shaped Sewers. (The tenth and eleventh characters representing either Circular or the unit of inches for the Height of the Sewer for Existing Horizontal Elliptical Sewers, Vertical Elliptical Sewers and Egg-Shaped Sewers.) See examples below:

00 - Circular
19 - 19"
32 - 32"

(6) Examples of Item Numbers together with Description and Pay Unit as provided in the Bid Schedule are provided below:

Item No.	Description	Pay Unit
50.71S10D00	RECONSTRUCTION OF EXISTING 10" DIAMETER CIRCULAR SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S12D00	RECONSTRUCTION OF EXISTING 12" DIAMETER CIRCULAR SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S18D00	RECONSTRUCTION OF EXISTING 18" DIAMETER CIRCULAR SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S24D00	RECONSTRUCTION OF EXISTING 24" DIAMETER CIRCULAR SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S23H14	RECONSTRUCTION OF EXISTING 23"W X 14"H HORIZONTAL ELLIPTICAL SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S30H19	RECONSTRUCTION OF EXISTING 30"W X 19"H HORIZONTAL ELLIPTICAL SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S14V23	RECONSTRUCTION OF EXISTING 14"W X 23"H VERTICAL ELLIPTICAL SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S19V30	RECONSTRUCTION OF EXISTING 19"W X 30"H VERTICAL ELLIPTICAL SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S20E29	RECONSTRUCTION OF EXISTING 20"W X 29"H EGG-SHAPED SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S24E42	RECONSTRUCTION OF EXISTING 24"W X 42"H EGG-SHAPED SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S25E37	RECONSTRUCTION OF EXISTING 25"W X 37"H EGG-SHAPED SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71S29E40	RECONSTRUCTION OF EXISTING 29"W X 40"H EGG-SHAPED SANITARY SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M15D00	RECONSTRUCTION OF EXISTING 15" DIAMETER CIRCULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M18D00	RECONSTRUCTION OF EXISTING 18" DIAMETER CIRCULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M30D00	RECONSTRUCTION OF EXISTING 30" DIAMETER CIRCULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M42D00	RECONSTRUCTION OF EXISTING 42" DIAMETER CIRCULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M38H24	RECONSTRUCTION OF EXISTING 38"W X 24"H HORIZONTAL ELLIPTICAL STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.

50.71M53H34	RECONSTRUCTION OF EXISTING 53"W X 34"H HORIZONTAL ELLIPTICAL STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M24V38	RECONSTRUCTION OF EXISTING 24"W X 38"H VERTICAL ELLIPTICAL STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M32V48	RECONSTRUCTION OF EXISTING 32"W X 48"H VERTICAL ELLIPTICAL STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M34V53	RECONSTRUCTION OF EXISTING 34"W X 53"H VERTICAL ELLIPTICAL STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M30E45	RECONSTRUCTION OF EXISTING 30"W X 45"H EGG-SHAPED STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M33E48	RECONSTRUCTION OF EXISTING 33"W X 48"H EGG-SHAPED STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M35E52	RECONSTRUCTION OF EXISTING 35"W X 52"H EGG-SHAPED STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M40E53	RECONSTRUCTION OF EXISTING 40"W X 53"H EGG-SHAPED STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M24R36	RECONSTRUCTION OF EXISTING 24"W X 36"H RECTANGULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71M32R48	RECONSTRUCTION OF EXISTING 32"W X 48"H RECTANGULAR STORM SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C16D00	RECONSTRUCTION OF EXISTING 16" DIAMETER CIRCULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C24D00	RECONSTRUCTION OF EXISTING 24" DIAMETER CIRCULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C36D00	RECONSTRUCTION OF EXISTING 36" DIAMETER CIRCULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C48D00	RECONSTRUCTION OF EXISTING 48" DIAMETER CIRCULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C45H29	RECONSTRUCTION OF EXISTING 45"W X 29"H HORIZONTAL ELLIPTICAL COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C60H38	RECONSTRUCTION OF EXISTING 60"W X 38"H HORIZONTAL ELLIPTICAL COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C29V45	RECONSTRUCTION OF EXISTING 29"W X 45"H VERTICAL ELLIPTICAL COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C34V53	RECONSTRUCTION OF EXISTING 34"W X 53"H VERTICAL ELLIPTICAL COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C38V60	RECONSTRUCTION OF EXISTING 38"W X 60"H VERTICAL ELLIPTICAL COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C32E44	RECONSTRUCTION OF EXISTING 32"W X 44"H EGG-SHAPED COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C34E46	RECONSTRUCTION OF EXISTING 34"W X 46"H EGG-SHAPED COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C38E50	RECONSTRUCTION OF EXISTING 38"W X 50"H EGG-SHAPED COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C41E60	RECONSTRUCTION OF EXISTING 41"W X 60"H EGG-SHAPED COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C42E56	RECONSTRUCTION OF EXISTING 42"W X 56"H EGG-SHAPED COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C30R42	RECONSTRUCTION OF EXISTING 30"W X 42"H RECTANGULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71C36R48	RECONSTRUCTION OF EXISTING 36"W X 48"H RECTANGULAR COMBINED SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71I36D00	RECONSTRUCTION OF EXISTING 36" DIAMETER CIRCULAR	L.F.

	INTERCEPTOR SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	
50.71I48D00	RECONSTRUCTION OF EXISTING 48" DIAMETER CIRCULAR INTERCEPTOR SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.
50.71I36R48	RECONSTRUCTION OF EXISTING 36"W X 48"H RECTANGULAR INTERCEPTOR SEWER, USING D.E.P. APPROVED CIPP LINING METHOD	L.F.

(NO TEXT THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-002

Title: **RODENT AND WATERBUG PEST CONTROL**

Prepared:	Approved:
1/12/2017	1/12/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 2/20/17.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

- **ATTACHMENT 1:** Revised Section 7.88 – Rodent and Waterbug Pest Control
  Pages A1-1 through A1-6

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

No Changes.

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Pages 515 through 520, Section 7.88 – Rodent and Waterbug Pest Control;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 1 (6 pages).

(NO TEXT THIS PAGE)

SECTION 7.88 - Rodent and Waterbug Pest Control

7.88.1. DESCRIPTION. The Contractor shall provide all labor, materials, plant and equipment, and incidentals required to survey and monitor rodent activity and control any infestation or outbreak of rodents and waterbugs (cockroaches) within the project limit.
New York City ("NYC") Local Law 37 of 2005 requires that the Contractor, or any subcontractor that the Contractor hires, shall comply with Chapter 12 of Title 17 of the NYC Administrative Code with respect to the application of pesticides to any property owned or leased by the City of New York..

7.88.2. MATERIALS. All materials shall be Registered by the New York State Department of Environmental Conservation ("NYSDEC") and comply with the NYC Health Code for the intended usage. Materials classified as Toxicity Category I, carcinogenic to humans by the US Environmental Protection Agency ("USEPA"), or classified as a developmental toxin by the State of California's Office of Environmental Health Hazard Assessment shall not be used. The Contractor shall verify that materials are:

- "NOT PROHIBITED" by the NYC Department of Health and Mental Hygiene ("NYC-DOHMH") using the NYC-DOHMH's Pesticide Product Search, available at:
  < https://a816-healthpsi.nyc.gov/ll37/ProductTestPesticide.aspx >.
- On the NYSDEC's list of Currently Registered Pesticides, available at:
  < http://pims.psur.cornell.edu/ >.

Rodenticide weatherproof (wax based) bait blocks shall be multiple dose anticoagulants such as Chlorophacinone, or single feed anticoagulants such as Brodifacoum (Weatherblok XT, Final All-Weather Blox), Bromadiolone (Contrac Blox), or an approved equivalent, registered by NYSDEC and not prohibited by NYC-DOHMH. Loose rodenticide meal or rodenticide pellet bait shall not be used.

Tamper proof bait station boxes shall be designed to exclude other mammals and shall be used with poisoned bait to attract rats. Information on "tamper proof bait station boxes" is available from the NYC-DOHMH Office of Pest Control Services (646-632-6600).

Live traps shall be of proper dimensions for trapping rats and mice, and shall not be used with poisoned bait.

Insecticide bait shall be a residual type registered by NYSDEC and not prohibited by NYC-DOHMH.

(A) SUBMITTALS

Prior to commencement of construction activities the Contractor shall submit to the Engineer manufacturer's installation instructions for all materials required for rodent and waterbug pest control work and product data which shall include illustrations, catalog data, pesticide labels, product characteristics, typical use, performance and limitation criteria of all rodent and waterbug pest control materials required. All pesticides and rodenticide submittals shall be accompanied by a printout from the NYC-DOHMH Pesticide Product Search showing that the specific brand of pesticide and rodenticide is "NOT PROHIBITED."

7.88.3. PERSONNEL. The Contractor shall employ two independent licensed exterminators: one to engage in survey and monitoring work to establish the level of infestation of rodents and insects and provide recommendations for specific Integrated Pest Management ("IPM") actions, and one to execute the rodent and waterbug pest control work to deal with such infestations. All pest control personnel employed by each exterminator company shall be licensed by NYSDEC as a Commercial Pesticide Applicator, Commercial Pesticide Technician or Commercial Pesticide Apprentice and must be supervised by an exterminator licensed by NYSDEC as a Commercial Applicator in categories 7A ("Structural & Rodent Control") & 8 ("Public Health Pest Control"). It is recommended (but not required) that all personnel engaged in survey and monitoring work or rodent control work possess a certificate of

completion from the NYC-DOHMH's half-day or three-day "Rodent Academy." The Contractor shall submit the names and license credentials of the two exterminator companies to the Engineer for approval prior to the commencement of any work under this section.

7.88.4. METHODS. Application and dosage of all materials shall be done in strict compliance with the manufacturer's recommendations. All surveying, monitoring, baiting, and/or live trapping work shall be performed in the presence of the Engineer, without which no payment will be made under this Section.

(A) GENERAL

The Contractor's construction activity is expected to disturb any established rodent and/or waterbug population that may exist within the project limits, possibly causing their dispersion. The Contractor shall take all appropriate action to eliminate and/or control these populations within the construction corridor: the construction corridor shall be defined as being the full width of streets under the contract and intersecting streets up to the limits of construction, from property line to property line, excluding buildings and under sidewalk building vaults.

Under the Maintenance of Site requirements for the contract, any unsanitary conditions, such as uncollected garbage or debris, resulting from the Contractor's activities which will provide food and shelter to the resident rodent population shall be corrected by the Contractor immediately after notification of such condition by the Engineer. Non-compliance shall be subject to the application of the "Nonconformance" provisions of the Item for Maintenance of Site, and no payment will be made for any additional application of rodenticide or insecticide needed to control resultant infestations.

(B) SURVEY AND MONITORING WORK

(1) Prior to Construction - The Contractor's designated survey and monitoring exterminator shall execute a survey of the project area and estimate the level of rodent (Norway rat, House mouse) infestation and the waterbug population within the construction corridor. An appropriate sample of utility manholes (sewer, electrical, telephone, etc.) and catch basins should be opened and surveyed to the satisfaction of the Engineer. Contractor shall maintain all survey records in the manner described in 7.88.6., Records and Reports.

(2) During Construction - The Contractor shall monitor the rodent activity through trapping (snap, glue traps or live traps), fecal count methods, and inspection of the conditions of all installed baits every week during construction activity or as otherwise directed by the Engineer. Monitoring during construction shall cover Contractor's plant and temporary facilities. Contractor shall maintain all monitoring records in the manner described in Section 7.88.6. on "Records and Reports" of this specification.

(C) RODENT CONTROL WORK

(1) Wetlands, Woodlands and Areas Within Seventy-five (75') feet of a Stream. 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 either streambank. Live traps must be used in these seventy-five (75') feet buffer zone areas and within wetland and woodland areas.

(2) Outside Wetland Areas, Woodland Areas and Beyond Seventy-five (75') feet of a Stream. In areas outside the seventy-five foot zone of protection adjacent to streams, and areas outside wetlands and woodlands, tamper proof bait stations with poisoned bait shall be established during the period of construction and any consumed or decomposed bait shall be replenished as directed.

Rodent control shall be achieved in two stages as follows:

Stage I. At least one month prior to initiation of the construction work, and periodically thereafter, live traps and/or rodenticide bait, as directed above, shall be placed at locations [e.g., burrows, utility manholes (sewer, electrical, phone, etc.), and catch basins] that are inaccessible to pets, human beings, children and other non-target species, particularly wildlife (e.g., birds) in the construction corridor. Locations of initial bait placement and quantities of bait shall be determined by the survey and monitoring exterminator's written report of his survey and monitoring results, or as otherwise directed by the Engineer.

Stage II. During Construction - Infested sites as determined by the survey and monitoring exterminator's monitoring report shall be baited and/or rebaited, and live traps shall be collected and replaced, the rates and quantities of which shall be determined by the written monitoring reports submitted weekly or as otherwise directed by the Engineer in consultation with the City's Office of Pest Control.

Bait may be placed in dry manholes without a tamper-proof bait station box, if the manhole configuration does not permit the use of a bait station box. If a sanitary sewer manhole has a concrete invert platform of sufficient size, a bait box shall be used. Bait placed in a manhole outside of a tamper-proof box shall be strung on a stainless-steel wire, and secured to the manhole structure. No separate payment shall be made for the wire or securing the wire to the manhole, and shall be deemed included in the bid price for Baiting of Rodent Base Stations. Rodent control personnel entering manholes shall comply with the confined space requirements required by the Occupational Safety and Health Administration ("OSHA") 29 CFR 1929 - Subpart AA – Confined Spaces in Construction.

The use of tamper proof bait station boxes shall be used with rodenticide in all other cases.

The baiting exterminator shall be responsible for collecting and disposing of all trapped and poisoned rodents found in live traps and tamper proof bait stations. Non-target species captured in live traps shall be released by the baiting exterminator within twenty-four (24) hours after notification by the Engineer. The baiting exterminator shall also be responsible for posting and maintaining signs announcing the baiting of each particular location. The signs shall be placed at least twenty-four (24) hours prior to the application of any pesticide or rodenticide, and shall meet the requirements of Local Law 37 of 2005. NYC-DOHMH provides a sample template sign for pesticide notification purposes in compliance with the law at:
< http://www1.nyc.gov/assets/doh/downloads/pdf/pesticide/notification-sign.pdf >.

The Contractor, under his maintenance of site operations, shall be responsible for the immediate collection and disposal of any visible rodent remains found on streets or sidewalk within the project limits. Any visible remains shall be placed into double plastic bags. No more than five (5) carcasses shall be placed into each bag. Each bag shall be a minimum of three (3) mils thick, black plastic. The bag shall have a note taped on with the contents (e.g., "dead rat"), and disposed as required by the NYC Department of Sanitation. No additional payment will be made for this work.

It is anticipated that public complaints will be addressed to the Engineer's Field Office. The Contractor, where directed by the Engineer, shall take appropriate Integrated Pest Management ("IPM") actions, such as baiting, trapping, proofing, etc., to remedy the source of a 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.

(D) WATERBUG CONTROL

Waterbugs shall include American Cockroaches, Oriental Cockroaches, Smoky Brown Cockroaches, Madeira Cockroaches, and other similar species.

Infested sites (e.g., sewers) shall be baited at least two (2) times per month with insecticides, or as directed by the Engineer in consultation with the exterminator monitoring the work and the NYC-DOHMH Office of Pest Control Services.

7.88.5. EDUCATION & TRAINING. The Contractor shall post notices in all Construction Bulletin Boards advising workers, employees, and residents to call the Engineer's Field Office to report rodent and waterbug infestations. The Contractor shall provide and distribute literature pertaining to IPM techniques of rodent control to affected businesses and superintendents of nearby residential buildings to ensure their participation in maintaining their establishments free of unsanitary conditions, harborage removal and rodent proofing.

Prior to application of any chemicals, the Contractor shall furnish copies or sample labels for each pesticide, antidote information and Material Data Safety Sheets ("MSDS") for each chemical used.

7.88.6. RECORDS AND REPORTS.

(A) GENERAL

The Contractor shall be responsible for assigning within the construction corridor an identifying number to each manhole, catch basin, and other location where bait and/or live trap placement and/or waterbug control work is proposed by the survey and monitoring exterminator. The Contractor shall then provide that list of locations and corresponding reference numbers along with a drawing showing the locations, as a reference for the exterminator(s) performing the work, to indicate locations of bait placement and waterbug control work and rodent and waterbug activity (droppings, bait consumed, dead rodents, etc.)

(B) SURVEY AND MONITORING WORK

(1) Prior to Construction – Contractor shall submit to the Engineer, for approval, a written survey report including proposed IPM procedures, including specific materials, quantities, locations, methods and time schedule for the implementation of the exterminating work. The written report shall also include a survey with a drawing (provided by the Contractor) marked with locations indicating all signs of rodent (Norway rat, House mouse) infestation and waterbug activity discovered during the execution of the survey indicating that rodent and waterbug pest control work is necessary. The report will be developed with input from the NYC-DOHMH Rat Information Portal at: < http://maps.nyc.gov/doitt/nycitymap/template/?applicationName=DOH_RIP >.

(2) During Construction - Based on monitoring results, Contractor shall submit to the Engineer a weekly written monitoring report identifying all locations and conditions of installed bait and/or other rodent control work. The monitoring report shall also include any other recommended IPM techniques, such as baiting, trapping, proofing, etc., proposed for rodent and waterbug pest control.

The survey and monitoring exterminator shall keep a record of all rodent and waterbug infestation surveys s/he has conducted. The Contractor shall be required to submit a copy of all survey and monitoring reports to the Engineer each week, prior to payment.

(C) RODENT AND WATERBUG CONTROL WORK

The baiting exterminator shall maintain records using the NYC Pesticide Use Reporting System ("NYCPURS"). These records will be kept by the Engineer. A weekly report from NYCPURS shall be prepared, signed and certified by the approved licensed exterminator, and such reports shall be submitted to the Engineer each week, prior to payment.

7.88.7. NONCONFORMANCE. If the Contractor fails to perform as directed to control the rodent and/or waterbug population at any location within the project limits for a period of more than one week, the Engineer will correct the adverse conditions by any means he deems appropriate, including but not limited to, the use of "outside services" and shall deduct the cost of the corrective work from any monies due to the Contractor. The deducted cost of this work shall be in addition to the non-payment for rodent and waterbug pest control.

7.88.8. MEASUREMENT.

(A) RODENT INFESTATION SURVEY AND MONITORING

The quantity to be measured for payment under Item No. 7.88 AA, RODENT INFESTATION SURVEY AND MONITORING, shall be a Lump Sum measurement.

(B) RODENT BAIT STATIONS

The quantity to be measured for payment under Item No. 7.88 AB, RODENT BAIT STATIONS, shall be the number of tamper-proof rodent bait station boxes and/or live traps satisfactorily installed or reinstalled after inspection within the construction corridor, as approved by the Engineer. However, the initial baiting, and subsequent rebaiting as may be required, of any bait station will be paid for under Item No. 7.88 AC.

(C) BAITING OF RODENT BAIT STATIONS

The quantity to be measured for payment under Item No. 7.88 AC, BAITING OF RODENT BAIT STATIONS, shall be the number of tamper-proof rodent bait station boxes, utility manholes, catch basins, or other locations approved by the Engineer, satisfactorily baited or rebaited to replenish consumed or decomposed bait within the construction corridor, as approved by the Engineer.

(D) WATERBUG BAIT APPLICATION

The quantity to be measured for payment under Item No. 7.88 AD, WATERBUG BAIT APPLICATIONS, shall be the number of blocks satisfactorily treated with insecticide bait within the construction corridor, as approved by the Engineer. A block shall be defined as the area of street, measured between property lines, from intersection to intersection. Each rebaiting of any block shall be considered as a new block for measurement purposes.

7.88.9. PRICES TO COVER.

(A) RODENT INFESTATION SURVEY AND MONITORING

Payment will be made at the lump sum price bid for RODENT INFESTATION SURVEY AND MONITORING which shall include the cost of furnishing all the labor, materials, plant, equipment (traps, etc.), insurance, and other incidentals required, including but not limited to providing all required maintenance of traffic equipment, to perform a rodent infestation survey of the project area and then monitor the site each week for rodent activity, all in accordance with the specifications and the directions of the Engineer.

Ten (10%) percent of the lump sum price bid will be paid when the initial survey of the project area has been completed and the written survey report has been submitted to the satisfaction of the Engineer. The remainder will be paid in proportion to the percentage of contract completion.

(B) RODENT BAIT STATIONS

The Contract price bid for RODENT BAIT STATIONS shall be a unit price per each tamper proof bait station box and/ or live trap installed or reinstalled after inspection and shall cover the cost of furnishing

all labor, materials, plant, equipment (bait stations, etc.), insurance, and other incidentals, including but not limited to providing all required maintenance of traffic equipment, required to control the rodent population found within the project limits in accordance with the specifications and the directions of the Engineer.

In addition to the payment for Rodent Bait Stations installed or reinstalled under this Item No. 7.88 AB, the Contractor will also be paid for each baiting or rebaiting, when required, of each bait station, under Item No. 7.88 AC.

(C) BAITING OF RODENT BAIT STATIONS

The Contract price bid for BAITING OF RODENT BAIT STATIONS shall be a unit price per each bait station, utility manhole, catch basin or other location approved by the Engineer satisfactorily baited or rebaited, when required, and shall cover the cost of furnishing all labor, materials, plant, equipment (bait), insurance, NYCPURS recordkeeping, and other incidentals, in accordance with the specifications and directions of the Engineer. Installation or resetting of the bait station will be paid for under Item No. 7.88 AB.

(D) WATERBUG BAIT APPLICATION

The Contract price bid for WATERBUG BAIT APPLICATION shall be a unit price per block treated by the exterminator and shall include the cost of furnishing all the labor, materials, plant, equipment (bait, etc.), insurance, NYCPURS recordkeeping, and other incidentals, including but not limited to providing all required maintenance of traffic equipment, necessary to control the waterbug population found within the project limits for the duration of the contract in accordance with the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
7.88 AA	RODENT INFESTATION SURVEY AND MONITORING	L.S.
7.88 AB	RODENT BAIT STATIONS	EACH
7.88 AC	BAITING OF RODENT BAIT STATIONS	EACH
7.88 AD	WATERBUG BAIT APPLICATION	BLOCK

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-003

Title: **ENGINEER'S FIELD OFFICE**

Prepared:	Approved:
1/12/2017	1/12/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 2/20/17.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

- **ATTACHMENT 1:** Revised Section 6.40 – Engineer's Field Office
  Pages A1-1 through A1-7

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

No Changes.

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Pages 372 through 379, Section 6.40 – Engineer's Field Office;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 1 (7 pages).

(NO TEXT THIS PAGE)

SECTION 6.40 - Engineer's Field Office

6.40.1. DESCRIPTION. The Contractor shall provide, furnish and maintain a fully equipped field office (Type A, B, C, CU, D or DU, as specified) for the exclusive use of and occupancy by the Department's engineering personnel and/or Supervising Consultant (herein after called "City personnel"), and by the engineering personnel of private utilities when specified. The field office shall be at a location approved by the Engineer and shall be a commercial building, store front, or with the approval of both Office of Construction Mitigation and Coordination (OCMC) and the Community Board it may be a mobile trailer(s). If a trailer is used it shall be subject to approval by the Engineer, and all necessary permits shall be obtained by the Contractor. The Contractor may have facilities in an adjoining area separated by a lockable door, provided such facilities are in a location approved by the Engineer. The field office shall be within ½ mile of the job site. Field offices located further than ½ mile from the job site shall require approval by the Director or Assistant Commissioner for Construction.

The field office structure and occupancy thereof shall conform to the requirements of all laws, rules, regulations and orders applicable to it.

The field office and all equipment, except as otherwise specified, may be new materials or may be used materials in good condition and satisfactory to the Engineer.

6.40.2. MATERIALS.

(A) GENERAL CONSTRUCTION. The Engineer's Field Office shall be in an approved and weatherproof building. It shall have a minimum ceiling height of seven (7') feet and be partitioned to provide the number of rooms required for the type of office specified. Floor space for Field Office Types C, CU, D, and DU shall be subdivided into work areas based on a floor plan provided by the City to the Contractor upon notification of space availability.

(B) GENERAL FACILITIES. The field office shall contain or have the following facilities incorporated:

(a) Lighting - Electric light, non-glare type luminaries to provide a minimum illumination level of 100 ft.- candles at desk height level.

(b) Heating and Cooling - Adequate equipment to maintain an ambient air temperature of 70^{o} F. $\pm 5^{o}$.

(c) Electrical Energy Outlets

(d) Toilet - A separate enclosed room, properly ventilated per code and complying with applicable sanitary codes shall contain a lavatory with a sink that provides running hot and cold water, flush-type toilet, mirror, electric hand dryer, and paper towel dispenser.

(e) Potable Water - Potable water supplied from an existing system or five (5) gallon capacity water cooler of a type to be approved by the Engineer shall be provided for use by City personnel. Replacement bottles of water shall be provided by the Contractor, when required.

(f) Signs - Store front locations shall have a window graphic sign in black and white lettering with the following inscription. Other locations shall have a wood or metal sign affixed on the outside wall of the building with the following inscription painted in black block lettering on a white background. Paints shall be approved exterior enamels.

CITY OF NEW YORK	2-1/2"
DEPARTMENT OF DESIGN AND CONSTRUCTION	3-1/2"
INFRASTRUCTURE	2-1/2"
RESIDENT ENGINEER'S FIELD OFFICE	2-1/2"

(g) Electric Refrigerator - Five (5) cubic feet minimum capacity for use by City personnel.

(h) Microwave, Toaster Oven, and Coffee Maker - Basic reheating kitchen equipment or approved appliances for use by City personnel.

(i) Windows and Doors - All windows and doors shall be weatherproof and each equipped with adequate locking devices. Each window shall be equipped with vertical blinds. Exterior doors shall be provided with two (2) separate "high security" dead bolt type cylinder locks, keyed alike, and three (3) keys shall be furnished for each lock.

(j) Partitions - Partitions for work space enclosures shall be either permanent walls or of the modular type similar to Herman Miller's standard fabric covered line.

(k) Kitchen Sink – Mechanism to provide non-drinking, hot and cold, running water.

(C) OFFICE EQUIPMENT.

(a) Pencil Sharpener - One standard pencil sharpener for use by City personnel.

(b) Telephone Answering Machine - The telephone answering machine to be provided shall be an electronic digital voice machine with emergency call forwarding capability. It shall be operable twenty four (24) hours per day and, when unattended, shall transmit to the caller the following message:

"You have reached the Field Office of the New York City Dept. of Design and Construction. No one is here now. We check our incoming messages frequently. We will get back to you as soon as possible. Please leave your name, message and phone number where you may be reached. In case of emergency, call the New York City Hotline at 311. Again, the emergency number is 311."

(c) Computer Equipment - Computers shall be provided for all contracts regardless of construction duration.

Computers furnished by the Contractor for use by City Personnel, for the duration of the contract, shall be in accordance with Table I - ADDITIONAL SPECIFIC REQUIREMENTS, contained herein, and shall meet the following minimum requirements:

(1) Personal Computer(s) - Workstation Configuration.

(a)	Make and Model:	Dell; HP; Gateway; Acer; or, an approved equivalent. (Note: an approved equivalent requires written approval of the Assistant Commissioner of ITS.)
(b)	Processor:	i5 (4MB Cache, 3.0GHz) or faster computer – Dual Processor.
(c)	System Ram:	Minimum of 16GB (Gigabytes) Dual Channel DDR3 SDRAM at 1333MHz – 2 DIMMSs
(d)	Hard Disk Drive(s):	500 GB (Gigabytes) Serial ATA (7200RPM) w/DataBurst Cache, or larger.
(e)	CD-RW:	Internal CD-RW, 48x Speed or faster.
(f)	16X DVD+/-RW	DVD Burner (with double layer write capability) 16x Speed or faster
(g)	I/O Ports:	Must have at least one (1) Serial Port, one (1) Parallel Port and three (3) USB Ports.
(h)	Video Display Card:	HD Graphics (VGA, HDMI) with a minimum of 64 MB of RAM.
(i)	Monitor:	22" W, 23.0 Inch VIS, Widescreen, VGA/DVI LCD Monitor.
(j)	Available Exp. Slots:	System as configured above shall have at least two (2) full size PCI Slots available.
(k)	Network Interface:	Integrated 10/100/1000 Ethernet card.
(l)	Other Peripherals:	Optical scroll Mouse, 101 Key Keyboard, Mouse Pad and all necessary cables.
(m)	Software Requirements:	Microsoft Windows 10 Professional, 32 or 64 bit; Microsoft Office Professional 365 ; Microsoft Project 365 ; Basic Adobe Acrobat Package ; Anti-Virus software package with 2 year updates

subscription; and, either Auto Cad LT or Microsoft Visio Standard Edition, as directed by the Engineer.

(2) All field offices requiring computers shall be provided with the following:

(a) One (1) broad-band internet service account. Wideband Internet connectivity at a minimum throughput of 15 Mbps download and 5 Mbps upload is required at each field office location with 1-5 staffers. For larger field offices see table below for minimum required upload speeds. Telephone service should be bundled together with Internet connectivity. Because of throughput requirements Verizon FIOS is the preferred connectivity provider where available.

Office Personnel #	**Upload Speeds (*Minimum*)**
1 – 5	10 Mbps
6 – 10	20 Mbps
11 – 15	25 Mbps
16 – 20	50 Mbps

This account will be active for the life of the project. The e-mail name for the account shall be the DDC Field Office/project Id (preferably Gmail or Outlook – e.g. HWK666@gmail.com).

(b) All necessary Cabling.

(c) Storage Boxes for and Blank CDs/DVDs.

(d) UPS/Surge Suppressor combo.

(e) 10 USB Thumb (or Flash) Drive – 16GB each

(3) All computers required for use in the Engineer's Field Office shall be delivered, installed, and setup in the Field Office by the Contractor.

(4) 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.

(5) An adequate supply of blank CDs/DVDs, and paper and toner cartridges for the printer shall be provided by the Contractor, and shall be replenished by the Contractor as required by the Engineer.

(6) 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 FiOS, is available at the planned field office location. Any questions regarding this policy should be directed to the Assistant Commissioner of Information Technology Services at 718-391-1761.

(d) Data Books - A copy of The AED Green Book, latest edition, published by Machinery Information Division of K-III Directory Corporation, 1735 Technology Drive, Suite 410, San Jose, California 95110-1313, shall be provided for all contracts that have a total Consecutive Calendar Days for General Construction duration as set forth in Schedule A of greater than 365 CCD's. Contracts of lesser duration shall not require any data books.

(D) Field Testing Equipment.

(a) 2 - Air Entrainment Meters - Pressure Type, with carrying case for use by City personnel. Each meter shall be capable of producing an accurate test result in approximately five (5) minutes and shall comply with ASTM Designation C 231.

(b) 2 - Slump Test Sets - Slump cone and test sets conforming to the requirements of ASTM Designation C 143, complete with rod and scoop for use by City personnel.

(c) Thermometers: For use by City personnel.
- (1) 1 - Minimum-maximum thermometer.
- (2) 3 - Asphalt thermometers of stainless steel construction with an accuracy of 0.5% of the full scale, able to measure temperatures from 50 to 500 degrees F. in 5 degree increments.
- (3) 3 - Surface Thermometers able to measure temperatures of flat surfaces similar to Sargent-Welsh Model S81441-D, or an approved equivalent.

(d) Nonsparking Pinch Bar - For use in opening manholes.

(e) Gas Meters - For use in detecting the presence of explosive gases and vapors for use by City personnel.

(f) Straight Edge - One 10 foot long straight edge for use by City personnel in detecting pavement surface tolerance.

(g) 48" Smart Level - For use in determining pedestrian ramp and sidewalk slopes.

(h) Chlorine Test Kits – For testing residual chlorine levels following water main flushing.

(i) Green Florescent Power Trace-Dye – For testing sewer connections.

(j) One Million Candlepower Rechargable Flashlight.

(k) Distance Measuring Wheel – For measuring long distances.

6.40.3. SPECIFIC REQUIREMENTS FOR ENGINEER'S FIELD OFFICE (TYPE A, B, C, CU, D, OR DU). In addition to the general requirements, each type of Field Office shall have the minimum floor area indicated in Table 6.40-I calculated based on usable area only, excluding any loss factors. Loss factors are defined as those areas such as lobby, sidewalk window ledge, elevator shafts and stairways. The Contractor shall provide and maintain furnishings for each type of Field Office in the quantity specified in Table 6.40-I. The furnishings shall be new or used equipment satisfactory to the Engineer:

(a) Each Type shall have a minimum of one outside door and four windows.

(b) Type C shall be partitioned to provide three (3) rooms.

(c) Type CU shall be partitioned to provide four (4) rooms, one of which shall be at least 150 s.f. in area (for use by private utilities).

(d) Type D shall be partitioned to provide four (4) rooms.

(e) Type DU shall be partitioned to provide five (5) rooms, one of which shall be at least 150 s.f. in area (for use by private utilities).

TABLE 6.40-I
ADDITIONAL SPECIFIC REQUIREMENTS

SPECIFIC REQUIREMENTS	FIELD OFFICE TYPE					
	A	B	C	CU	D	DU
Minimum useable floor space (Square Feet)	400	800	1200	1200	1,800	1,800
Office desks, at least 4'-8" x 2'-8", with drawers, locks, and keys.	2	2	4	8*	8	12*
Swivel chairs, with arms, for the above.	2	2	4	8*	8	12*
Office folding chairs, metal, with padded seats and backs.	2	3	6	14**	8	16**
Steel supply cabinets (approximate size 72" high by 36" wide by 18" deep), with four adjustable shelves, tumbler lock and 3 keys.	1	1	1	1	1	1
Fire resistant cabinet, 4-drawer, legal size with lock and three (3) keys, meeting the requirements for "Filing devices, Insulated (36 E 9)" Class D Label, of the Underwriters' Laboratories, Inc. Specifications.	1	1	1	3***	4	6***
Individual lockers (17" wide x 18" deep x 72" high) with flat key locks and two (2) keys each.	1	1	4	4	4	4
Calculating machines, tape type with digital display registering at least ten (10) digits.	1	1	2	2	3	3

Waste paper baskets (metal, approximately 12" square by 16" high).	1	2	2	6*	4	8*
Fire extinguishers, non-toxic, dry chemical type meeting Underwriters Laboratories, Inc., approval for Class A, Class B and Class C fires with a minimum rating of 2A:IOB:10C.	1	1	2	3****	4	5****
First Aid Kit kept properly stocked with appropriate first aid supplies at all times.	1	1	1	1	2	2
Drafting tables (3'-0" x 5'-0") with storage drawers and stool.	1	2	2	3****	4	5****
Photocopying Machine – Stand-alone, heavy duty, electric, dry-process color photocopying type with color scan and send capability via e-mail, a minimum production rate of 70 pages per minute and an adequate supply of copy paper, toner, etc. The machine shall be capable of duplex copying paper sizes of 8-1/2 x 11 inches, 8-1/2 x 14 inches and 11 x 17 inches, and have separate trays for each paper size. It shall have a document feeder, collator, stapler, and the capability to reduce/enlarge copies between each paper size. The supply of each size copy paper, toner, etc. shall be replenished and the machines shall be maintained for the duration of the contract by the Contractor as required by the Engineer. Make and model can be Minolta, Canon, IBM, Epson, or an approved equivalent, and shall be networked to the office computers for printing capability.	1	1	1	1	1	1
Standalone networked color laser printer. (Not required if photocopying machine prints in color)	XX	XX	XX	XX	XX	XX
Vertical filing plan racks for six sets of 22"x36" plans each rack.	1	1	2	3****	4	5****
Telephone lines for calls, where one shall be dedicated for the Fax Machine, one for each computer fax/modem and the others for telephone instruments.	4	6	6	7‡	8	9‡
Telephone instruments.	2	2	3	5‡	4	6‡
Telephone answering machine.	1	1	1	1	1	1
Fax Machine - With an adequate supply of copy paper, toner, etc. The supply of copy paper, toner, etc. shall be replenished and the machines shall be maintained for the duration of the contract by the Contractor as required by the Engineer.	1	1	1	1	1	1
Personal Computer - Workstation Configuration	1	3	3	3	4	4
Bottled water with refrigerator unit-hot/cold water. (For private utilities room.)				1		1
Heavy duty commercial grade diamond cut shredder with automatic start. The shredder shall be able to receive 8-1/2 inch wide paper and shred a minimum of 15 sheets simultaneously along with CDs and staples.	1	1	1	1	1	1
Projector – 1080p LCD with a min. of 2200 ANSI Lumins, 1920 x 1080, 16:9, 40,000:1 contrast ratio, HDMI, VGA, USB, and a 10 feet diagonal, 16:9 Projection Screen.	-	-	1	1	1	1

‡ *Provide one (1) telephone line and two (2) telephone instruments for the exclusive use by private utilities personnel. The line shall interconnect the two telephone instruments by push button control.*

* *Provide four (4) each of Office Desks, Swivel Chairs and Waste Paper Baskets in private utilities room.*

** *Provide eight (8) Folding Chairs in private utilities room.*

*** *Provide two (2) Fire Resistant 4- Drawer Legal Size Cabinets in private utilities room.*

**** *Provide one (1) each of Fire Extinguisher, Drafting Table and Vertical File Rack in private utilities room.*

6.40.4. CONSTRUCTION METHODS. The building shall be fully equipped and made available for use and occupancy by the Department's personnel and/or Supervision Consultant not less than thirty (30) days prior to the start of any contract work.

The building interior (including access foyers, stairwells, etc.) shall be maintained in good, clean, and sanitary working condition by the Contractor for the duration of the contract. The Contractor shall provide and pay all costs for electrical service, telephone service for calls within New York City limits, hot and cold water, heat and fuel, and daily janitor service. Staples, such as paper towels, hand soap, toilet paper, and similar supplies, shall always be available.

Where necessary, the site for a mobile trailer(s) shall be graded and shoulder stone placed and maintained as directed by the Engineer to provide a parking area for City personnel and, if necessary, an approach road shall be provided. Plumbing work shall include all water supply, drainage and piping required for the operation of a complete installation. Temporary water service shall be provided from an existing main and extended into the trailer and all fixtures requiring water supply shall be properly connected up. All necessary soil, waste, vent and drainage piping shall be provided and connected to the existing sewer or as otherwise directed.

The office, incorporated facilities, equipment, and personal property of the Department's employees shall be protected by the Contractor against loss or damage from fire, theft, or other causes, at all hours of the day and night. The Contractor shall provide fire insurance, extended coverage and vandalism, malicious mischief and burglary, and theft insurance coverage in the amount of forty thousand dollars ($40,000.00) for office equipment of the City of New York in the Engineer's field office and for property of City personnel that is used in the contract work and stored in the office. All insurance coverage shall be written by a company approved by the Commissioner and payable in case of loss to the City of New York.

The office shall be maintained by the Contractor in first class condition until final acceptance of the work.

At the direction of the Engineer, any equipment on the above lists may be deleted. He may direct that other equipment of equivalent value be supplied by the Contractor or an appropriate credit be taken for the value of equipment not provided.

When directed by the Engineer, the Contractor shall disconnect all services and remove and dispose of all temporary installations from the site, including fencing, surfacing and utilities, the area shall then be cleaned, loamed and seeded if required and left in a neat and acceptable condition. On and after the date of the Engineer's Final Acceptance, the temporary structure and all installed equipment shall become the property of the Contractor, and shall be disposed of, by him, away from the site of the work. Engineer's Final Acceptance shall be when the Contractor has completed all punch list work and Official Completion Date has been set.

6.40.5. NONCONFORMANCE. No payment will be made under Engineer's Field Office for each calendar day during which there are deficiencies in compliance with the requirements of any subsection of this specification. The first calendar day shall commence twenty-four (24) hours after notice to the Contractor of such a deficiency. This non-payment shall be deducted from the Contractor's next estimate as a charge to the Contractor on the item. The amount of such calendar day non-payment will be determined by dividing the unit price bid per month by 30.

In addition, the Contractor may be subject to liquidated damages in accordance with Schedule A.

6.40.6. MEASUREMENT. The quantity to be measured for payment under this item shall be the number of months that the Field Office is available for occupancy by the Field Engineers during the period of the contract. Payment will begin the first month that the office is fully equipped, serviced as specified, and made available for occupancy. The Field Office is to be continuously made available and Monthly payments will continue for the duration of the contract through a period not to exceed 6 months past the substantial completion date. When directed in writing by the Commissioner, the Field Office will be provided and paid for a period of time beyond 6 months past the substantial completion date. Payment for each month's occupancy after the date of substantial completion acceptance will be made as part of the final estimate. Monthly payments may be terminated on a specified date prior to acceptance of the contract by written notification by the Engineer that such office will no longer be required on the contract.

6.40.7. PRICE TO COVER. The unit price bid per month for the item Engineer's Field Office shall include the cost of furnishing all labor, materials, equipment, ground rental, fire and theft insurance, and utility charges necessary to complete the work of providing or constructing the field office; making all necessary electrical, water, sewer, and other connections required to make the above facilities operative; payment of all rental costs; furnishing and paying for heating fuel, as required; all electrical energy;

private telephone services; staples, as specified; and all necessary incidentals to complete the work - all in accordance with the specifications and the directions of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
6.40 A	ENGINEER'S FIELD OFFICE (Type A)	MONTH
6.40 B	ENGINEER'S FIELD OFFICE (Type B)	MONTH
6.40 C	ENGINEER'S FIELD OFFICE (Type C)	MONTH
6.40 CU	ENGINEER'S FIELD OFFICE (Joint Use) (Type CU)	MONTH
6.40 D	ENGINEER'S FIELD OFFICE (Type D)	MONTH
6.40 DU	ENGINEER'S FIELD OFFICE (Joint Use) (Type DU)	MONTH

(NO TEXT THIS PAGE)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-004

Title: **FIRE DEPARTMENT FACILITIES**

Prepared:	Approved:
1/12/2017	1/12/2017
Richard Jones, P.E. CWI — Date	Mohsen Zargarelahi, P.E. — Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 2/20/17.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

NONE

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

No Changes.

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Page 332, Section 6.23 – Fire Department Facilities, Subsection 6.23.4.(A), 3rd paragraph;
Delete the words "Bureau of Fire Communications";
Substitute the words "Bureau of Facilities Management".

b) **Refer** to Page 332, Section 6.23 – Fire Department Facilities, Subsection 6.23.4.(A), 9th paragraph;
Delete the words "Bureau of Fire Communications";
Substitute the words "Bureau of Facilities Management".

c) **Refer** to Page 332, Section 6.23 – Fire Department Facilities, Subsection 6.23.4.(A), 9th paragraph;
Delete the words "(718) 624-4194";
Substitute the words "(718) 281-3846".

d) **Refer** to Page 333, Section 6.23 – Fire Department Facilities, Subsection 6.23.4.(E), 1st paragraph;
Delete the words "Bureau of Fire Communications";
Substitute the words "Bureau of Facilities Management".

e) **Refer** to Page 339, Section 6.23 – Fire Department Facilities, Subsection 6.23.6, 1st paragraph;
Delete the words "Bureau of Communications";
Substitute the words "Bureau of Facilities Management".

f) **Refer** to Page 343, Section 6.23 – Fire Department Facilities, Subsection 6.23.6.(I);
Delete the words "steel bar reinforcement and".

g) **Refer** to Page 440, Section 6.70 – Maintenance and Protection of Traffic, Subsection 6.70.9.(D);
Delete the words "Bureau of Fire Communications";
Substitute the words "Bureau of Facilities Management".

(NO FURTHER TEXT)

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-005

Title: **DIGITAL PHOTOGRAPHS**

Prepared:	Approved:
1/12/2017	1/12/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 2/20/17.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

- **ATTACHMENT 1:** Revised Section 6.43 – PHOTOGRAPHS
  Pages A1-1 through A1-4

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Page 37, Section 1.06.45 – Progress Photographs;
Delete in its entirety the Section;
Substitute the following: "NO TEXT."

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 2 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

b) **Refer** to Page 385, Section 6.43 - Photographs;
Delete in its entirety the Section;
Substitute the revised Section in Attachment 1 (4 pages).

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-005
Title: **DIGITAL PHOTOGRAPHS**		

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARD SEWER AND WATER MAIN SPECIFICATIONS, DATED 7/1/14:

All references contained below are to the New York City Department of Environmental Protection Standard Sewer and Water Main Specifications, Dated July 1, 2014. Said Standard Sewer and Water Main Specifications are hereby revised as follows:

a) **Refer** to Page I-16, Section 10.32 – PHOTOGRAPHS;
Delete in its entirety the Section;
Substitute the revised Section:

"The Contractor shall be required to provide "PHOTOGRAPHS" in accordance with **New York City Department of Transportation (NYCDOT) Standard Highway Specifications Section 6.43 – Photographs.**"

SECTION 6.43 – Photographs

6.43.1. INTENT. This section describes the work of providing a photographic record of contract work.

6.43.2. DESCRIPTION. The work shall consist of the furnishing of all required photographic equipment and materials; the taking of digital photographs; making prints from digital files; and submitting prints and digital files to the Engineer.

6.43.3. MATERIALS.

(A) PRINTS

Prints shall be 7-1/2" x 9-1/2" image area on 8" x 10" single-weight, gloss paper, and shall be in color. Prints shall be inserted in standard weight Archival Quality clear poly sheet protectors and submitted in a hard cover three (3) ring binder. The following information shall be imprinted, or indelibly printed, on a white border measuring no more than one and one half (1-1/2") inch at the bottom of the front of each photograph:

(a) Contract Number and Job Location
(b) Photograph Number
(c) View and Description - (Indicating a general description of what the photograph represents)
(d) Photograph Type: Preconstruction Photograph or Construction Progress Photograph
(e) Date - (The date the photograph was taken.)
(f) Address – street address where photograph was taken
(g) Borough
(h) Street Segment ID
(i) Name of Photographer
(j) Department Witness

The Contractor shall furnish to the Commissioner one (1) set for each view taken, each set consisting of two (2) 8" x 10" prints and one (1) digital file.

All prints and digital files shall become the property of the Commissioner. All completed prints and digital files shall be delivered to the Engineer within two (2) weeks after the photographs have been taken. Approved binders for the clear poly sheet protectors containing all materials shall be furnished by the Contractor and delivered to the designated construction office at the time of the initial submission of prints and DVDs at such other times as may be required thereafter.

(B) DIGITAL FILES

Digital files shall be captured as 7.2 megapixel files or greater, with a minimum pixel array of 2,400 pixels by 3,000 pixels. The camera used to capture the digital files shall be a Digital SLR (Single Lens Reflex) camera or approved equal; "point and shoot" cameras or cameraphones are not acceptable. Digital cameras shall produce images using true optical resolution; "digital zoom" is not acceptable. Images shall not be resized or interpolated. The file format for digital files shall be Joint Photographic Experts Group format ("JPG"). The digital files shall not be modified or processed in any way to alter the JPG file's metadata, including the photograph's original capture date.

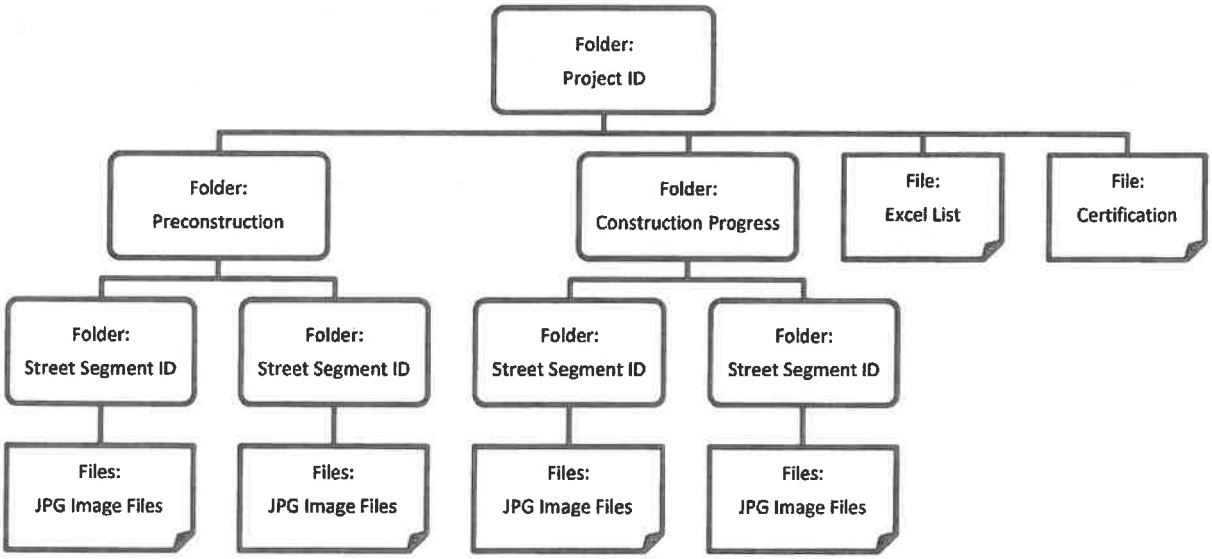
Digital files shall be submitted on Digital Versatile Disk ("DVD"). DVDs shall be inserted in standard weight Archival Quality clear poly sheet protectors, and submitted in a hard cover three (3) ring binder. The information imprinted on each print shall be provided on an Excel file included on the DVD. The DVD shall be labeled with the Project ID and the geographical area and streets depicted in the photographs. Labeling using adhesive labels is not acceptable.

Digital files shall have file names in the following format: a^b^c^d^e^f.JPG, where "a" through "f" are as follows:

(a) Contract Number
(b) Photograph Number
(c) Date, in YYYY-MM-DD format (The date the photograph was taken.)
(d) Address – street address where photograph was taken
(e) Borough
(f) Street Segment ID

A sample file name would be "HBX123^0021^2016-04-19^123 Main St^Queens^55555.JPG"

The files on the DVD shall be organized in folders by Photograph Type and Street Segment ID as follows:



(C) CERTIFICATION

The Photographer shall provide a signed certification that the files on the DVD are unaltered and are an accurate representation of the subject photographed. The original certification, in a clear poly sheet protector, shall be submitted with the prints and digital files, and a scanned copy shall be included on the DVD.

6.43.4. METHODS. The Contractor shall employ and pay for the services of a competent Professional Photographer who, at the direction of the Commissioner or his authorized representative, shall take Preconstruction Photographs and Construction Progress Photographs and such other photographs which may be required during the period of the contract.

The Photographer shall be available for taking the required photographs within forty-eight (48) hours after receiving notification from the Commissioner or his authorized representative.

Photographs shall be taken under the supervision and direction of the Engineer. The Engineer reserves the right to reject any and all views that are not reasonably clear and definitive. No separate or additional payment will be made for any additional photographs that are required as a result of the rejection of views.

6.43.5. PRECONSTRUCTION PHOTOGRAPHS. Preconstruction Photographs shall show the conditions existing on the work site prior to the commencement of the contract work. The Preconstruction Photographs will generally represent views of:

- The original surface conditions of streets, curbs and walks, and buildings;
- Evidence of damage, disrepair, or emergency situations;
- All encumbrances and/or encroachments which may be affected by the construction of the proposed work.

When there is no pay item listed in the Bid Schedule, the number of Preconstruction Photographs shall be as follows:

(A) Highway Street Reconstruction projects: 150 sets per million dollars of street reconstruction work;

(B) Highway Resurfacing projects: 4 sets per 250 linear feet of roadway for resurfacing work;

(C) Sewer and Water Main projects: 2 sets (1 set each side of street) per 25 linear foot of sewer and water main.

When there is an item listed in the Bid Schedule, the quantity to be measured for payment shall be the number of sets, each set consisting of a digital file and the two (2) prints made from the digital file, of Preconstruction Photographs including photographs showing the original condition of all encumbrances and/or encroachments which may be affected by construction of the proposed work, and which are delivered as directed by the Engineer.

6.43.6. CONSTRUCTION PROGRESS PHOTOGRAPHS. Construction Progress Photographs shall show the conditions existing during the progress of, and at the completion of the contract work. The photographs will generally represent views of the work under construction and completed work. Construction Progress Photographs shall be taken monthly and upon completion of the work.

The approximate number of Construction Progress Photographs is as follows:

(A) Highway reconstruction and resurfacing projects: Minimum 2 sets per 250 linear feet of roadway under construction or completed in the last month.

(B) Pedestrian ramps on all projects: Minimum of 1 set for every pedestrian ramp under construction or completed in the last month, in addition to other progress photographs.

(C) Sewer and Water Main projects: Minimum of 4 sets for every 100 feet of sewer or water main under construction.

No separate payment will be made for Construction Progress Photographs. The cost of taking and providing sets of Construction Progress Photographs shall be included in the prices bid for all other items of work.

6.43.8. PRICE TO COVER (PRECONSTRUCTION PHOTOGRAPHS ONLY). When there is an item listed in the Bid Schedule, the contract price bid per set shall cover the cost of furnishing all labor, materials, plant, equipment, insurance, and necessary incidentals required, including the cost of the photographer, and the cost of furnishing the required prints, digital files, DVDs, and ring binders, and completing the work in accordance with the specifications and the directions of the Engineer.

When there is no item listed in the Bid Schedule, no separate payment will be made. The cost of furnishing all labor, materials, plant, equipment, insurance, and necessary incidentals required, including the cost of the photographer, and the cost of furnishing the required prints, digital files, DVDs, and ring

binders, and completing the work in accordance with the specifications and the directions of the Engineer shall be included in the prices bid for all other items of work.

Payment will be made under:

Item No.	Item	Pay Unit
6.43 D	DIGITAL PHOTOGRAPHS	SETS

NYC DDC Department of Design and Construction	SPECIFICATION BULLETIN	SB 17-006

Title: **RECORDS OF SUBSURFACE STRUCTURES**

Prepared:	Approved:
1/12/2017	1/12/2017
Richard Jones, P.E. CWI Date	Mohsen Zargarelahi, P.E. Date
Director, Specifications – Infrastructure Design	Assistant Commissioner – Infrastructure Design

APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 2/20/17.

SUPERSEDENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

NONE

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS VOLUME 1 OF 2, DATED 8/1/15:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

a) **Refer** to Page 9, Section 1.06.18 – Records of Subsurface Structures, Etc.;
Delete the first two paragraphs;
Add the following paragraph to the beginning of the Section:

"The Contractor stipulates that it has the obligation to examine and review any and all available documents and other sources of information concerning the condition of the sub-soil materials, subsurface conditions and existing subsurface structures of bridges, pipes, tunnels, conduits, sewers, foundations, bulkhead walls and other subsurface structures and stipulates that it has made such investigation and research as it deems necessary. To the extent the Contractor incurs delays or damages based on sub-soil materials, subsurface conditions and existing subsurface structures that were known or reasonably could have been known to the Contractor through such available documents or other sources of information, the Contractor will make no claim for such delays or damages."

(NO TEXT THIS PAGE)

I - PAGES

NEW SECTIONS

NOTICE

UNLESS OTHERWISE NOTED, ALL SECTIONS, SUBSECTIONS, ARTICLES, OR SUBARTICLES AS REFERRED TO HEREIN WITHIN THESE NEW SECTION SPECIFICATIONS SHALL BE THOSE OF THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION'S (NYCDOT'S) CURRENT STANDARD HIGHWAY SPECIFICATIONS WITH CURRENT ADDITIONS, MODIFICATIONS AND REVISIONS TO THE STANDARD HIGHWAY SPECIFICATIONS (R-PAGES).

THE STANDARD HIGHWAY SPECIFICATIONS ARE NOT INCLUDED IN THESE I-PAGES. SEE THE NYCDOT STANDARD HIGHWAY SPECIFICATIONS BOOKS FOR STANDARD SPECIFICATIONS TEXTS.

(NO TEXT ON THIS PAGE)

TABLE OF CONTENTS

6.02 PA	Pneumatic Excavation Around Trees	I-2
8.53 WFR	Retaining Wall Flag Repair	I-6
PK-482B	Removing and Reinstalling Existing Plaques	I-7

SECTION 6.02 PA

Pneumatic Excavation Around Trees

6.02PA.1. INTENT. This Section describes the excavation of trenches to be performed pneumatically around existing trees to remain.

6.02PA.2. DESCRIPTION. The Contractor shall perform pneumatic excavation work at locations where trees existing within the work area are required to remain. This work requires the Contractor to protect tree roots during excavation and implement, as needed, a temporary excavation support system. Work covered under this section shall be performed at the locations indicated on the Contract Drawings, in accordance with the specification, and as directed by the Engineer, in consultation with and under the supervision of Tree Consultant (Item 4.21).

6.02PA.3. SUBMITTALS. Follow the procedures in the NYC Department of Transportation's Standard Highway Specifications, General Conditions, **Section 1.06.31**.

(A) Qualifications: Submit letter documenting prior experience of Contractor performing pneumatic excavation.

Shop drawings: Where required, the Contractor shall submit design shop drawings for any temporary excavation support system to be used during the pneumatic excavation work. The shop drawings shall be prepared, signed, and sealed by a Professional Engineer currently licensed in the State of New York. The shop drawings shall be submitted to the Engineer at least two (2) weeks before commencement of excavation. Excavation work may not commence until the shop drawings are approved by the Engineer.

6.02PA.4. QUALITY CONTROL

(A) OPERATOR QUALIFICATIONS: The Contractor or Subcontractor performing this excavation work shall having at least one year of documented experience operating the pneumatic excavation tool in conjunction with related equipment as described herein.

(B) TREE CONSULTANT: Unless otherwise directed by the Engineer, all pneumatic excavation work shall be performed under the direction of the Engineer, in consultation with the Tree Consultant (Item 4.21), also referred to in the drawings as the Consulting Arborist.

(C) PRE-PNEUMATIC EXCAVATION MEETING: Prior to the start of such excavation, the Contractor and its approved Operator for pneumatic excavation shall attend a meeting arranged by the Engineer, with the Tree Consultant (Item 4.21) and other parties as appropriate, to review the requirements of this item including the schedule of operations, the mandatory presence of the Tree Consultant, safety measures, reporting, etc. The Contractor is required to submit a schedule of his anticipated pneumatic excavations at this meeting.

6.02PA.5. MATERIALS

Materials shall meet the following requirements, as modified by any supplemental landscape specifications or special notes included in the contract documents. Where indicated, reference shall be to the latest revision/edition of Standard Specifications of the New York State Department of Transportation (NYSDOTSS):

(A) PNEUMATIC EXCAVATING TOOL. Excavation shall be performed through the use of a pneumatic excavation tool with the following requirements:

(1) The high air velocity excavation tool shall be specifically designed to fracture, pulverize, and displace porous and semi-porous soils without harming or causing damage to tree roots, existing subsurface utilities or other non-porous objects.

(2) The Contractor shall submit catalog cuts from the manufacturer verifying that the Pneumatic excavation tool meets the following criteria:

Rated Operating Pressure: 6.2 – 7.0 bar

Air Stream Velocity at Cutting Head: 2,200 – 2,500 km/hr

Air Displacement: 4,000 – 5,000 L/min

(B) AIR COMPRESSOR. The air compressor may be either a portable or truck-mounted unit and shall be adequately sized as required to power the pneumatic excavation tool in accordance with the manufacturer's recommendations for the pneumatic excavating tool.

(C) VACUUM TRUCK. A vacuum truck should be used to collect excavated spoil directly from the trench or pit.

(D) CONTAINMENT STRUCTURE. To prevent the spread of excavated soil onto adjacent roadways and areas beyond the designated work zone limits, the Contractor shall provide a mobile structure or barrier to contain the material dislodged by the pneumatic excavation tool from the trench or pit. Timber or corrugated metal shields, tents supported on tubular frames or other structures as approved by the Engineer may be used.

(E) ROOT PROTECTION. The following are required for root protection:

Item	NYSDOT SS Articles
Quilted Covers	711-02
Burlap	711-06

6.02PA.6. METHODS. The work shall be performed where shown on the Contract Drawings and as directed by the Engineer.

(A) RESPONSIBILITIES OF THE CONTRACTOR: Prior to bidding, the Contractor shall examine the site and available information, and formulate methods of construction that will not result in any damage to existing trees during excavation. In any event, the Contractor will be held liable for irreparable and/or irreversible damage to any trees harmed due to the Contractor's methods and shall replace those trees as directed by the Department of Parks and Recreation, at no additional cost to the City.

(B) WORK SITE SAFETY: In addition to the Department of Design and Construction's Safety Requirements policy and responsibilities, the pneumatic excavation shall be performed in accordance with the manufacturer's operating instructions. The Contractor shall be responsible to provide adequate equipment and perform pneumatic excavation techniques properly to preclude movement of any air-borne soils onto adjacent roadways or other areas beyond the designated work zone limits. Failure to contain and/or collect the excavated soil will result in the immediate termination of pneumatic excavation until soil containment and/or collection procedures are determined adequate by the Engineer. The Contractor shall keep the public at a safe distance from the work zone at all times by means approved by the Engineer.

(C) DUST CONTROL: The work area shall be watered thoroughly at least twenty-four (24) hours in advance of, but no more than forty-eight (48) hours, prior to the start of any pneumatic excavation in order to reduce the incidence of airborne dust resulting from the pneumatic excavation operation.

(D) EXCAVATION – GENERAL: All excavation using the pneumatic excavation tool shall be performed in accordance with the manufacturer's recommendations in order to remove soil without causing damage to the roots of trees, buried structures, and/or utilities either in or adjacent to the excavation. The Contractor shall excavate within limits designated for pneumatic excavation shown on the Contract Drawings or as directed by the Engineer, in consultation with the Tree Consultant (Item 4.21), using the pneumatic excavating tool. When working near utilities, the Contractor shall be responsible to locate underground facilities as required under 16 NYCRR Part 753 and **Section 1.06.28** of the NYC Department of Transportation's Standard Highway Specifications.

(E) EXCAVATION – TEMPORARY EXCAVATION SUPPORT SYSTEM: Approved sheeting and bracing shall be used where necessary to support the sides of the excavation, in order to: prevent damage to subsurface structures and adjacent buildings; safeguard persons and property; minimize inconvenience to traffic and the public; protect the structure to be installed; support the adjacent tree(s); and, provide suitable and safe working conditions. Except as otherwise provided, deviations from the above will be permitted only where, in the judgment of the Engineer, such exception will not result in any of the hazards described above.

In cases where sheeting and bracing will not adequately protect adjacent structures from damage and settlement, the Contractor will be required to use such measures as are necessary to safely support and maintain adjacent and abutting property and structures, support the tree without causing damage to the tree, and to maintain the work safe to life, limb, and property.

All sheeting and bracing systems that the Contractor elects to use or that are ordered to use by the Engineer shall comply with the requirements of **Section 40.05, "SHEETING AND BRACING**," of the NYCDEP, Standard Sewer and Water Main Specifications, and must receive the approvals stated therein.

Unless otherwise specified in the Contract Drawings or these Specifications or specifically permitted in writing by the Engineer, the Contractor shall be required to withdraw and remove all sheeting and bracing simultaneously with the backfilling of the excavation.

(F) ROOT PROTECTION: The Contractor shall place wet burlap or cotton mats upon both the fibrous and structural roots immediately after they have been exposed by the pneumatic excavating tool. The burlap or cotton covering may be removed to perform inspection or construction operations, but the Contractor shall be required to keep the burlap or cotton towels wet and the roots moist until backfilling is complete.

The Engineer shall be immediately informed of any damaged tree roots. No tree roots may be pruned except as specifically authorized by the Tree Consultant (Item 4.21). In case the concentration of roots obstructs the placement of utilities, footings or other structures, limited pruning may be necessary as directed by the Tree Consultant (Item 4.21). Tree roots in excess of one (1) inch in diameter, measured at the edge of the excavation, shall be cut cleanly at the edge of excavation using a sharp cutting tool. All root pruning shall be performed under the direction of the Tree Consultant (Item 4.21).

(G) TREE CONDITION REPORT: The Contractor shall supply the Tree Consultant (Item 4.21) with information as needed for the Tree Consultant to prepare periodic reports to the Engineer summarizing the number, type and condition of trees adjacent to each area of pneumatic excavation. These reports shall also indicate the duration of open excavation and identify any root damage and mitigation actions taken.

(H) BACKFILLING: Refer to Section 6.02 PB "Backfilling Around Trees", herein this Addendum No. 1, for the requirements and procedures for backfilling excavated areas.

6.02PA.7. MEASUREMENT.

The quantity to be measured for payment hereunder shall be the number of cubic yards of soil and fill material removed by pneumatic excavation, completed, as described herein and to the satisfaction of the Engineer. The volume to be obtained by vehicle measurement.

In determining the vehicle measurement, only water level loads that have been raked by the Contractor to a flat exposed surface will be accepted by the Engineer and no allowance will be made for any crown or peak of the load.

6.02PA.8. PRICE TO COVER.

The contract price bid for "PNEUMATIC EXCAVATION AROUND TREES" shall be a unit price per cubic yard of material excavated as described herein, at the locations and to the limits indicated on the Contract Drawings or directed by the Engineer, in consultation with the Tree Consultant (Item 4.21). The unit price bid shall include the cost of all labor, materials, plant, equipment, professional engineering design services, insurance, and all other work incidental thereto needed to perform the excavation work; all in accordance with the Contract Drawings, the specifications and the directions of the Engineer. Disposal of excess and unsuitable (excluding contaminated) materials shall also be deemed included in the unit price bid for this Item 6.02 PA "PNEUMATIC EXCAVATION AROUND TREES."

No separate payment will be made for replacement trees required by NYCDPR that the Contractor shall acquire and plant as a result of damage to trees caused by the Contractor's excavation methods.

Payment will be made under:

Item No.	Item	Pay Unit
6.02 PA	PNEUMATIC EXCAVATION AROUND TREES	C.Y.

SECTION 8.53 WFR
Retaining Wall Flag Repair

8.53WFR.1. INTENT.

This work shall consist of the repair of flagged conditions (Safety and Structural) of the existing retaining wall (sea wall) as ordered by the Engineer during the life of the contract.

Any damage to the existing sea wall caused by the Contractor's negligence or any construction work performed on the wall by the Contractor, without the written approval of the Engineer, shall be repaired to the satisfaction of the Engineer at the sole expense of the Contractor. This item shall not relieve the Contractor of his requirements specified in Section 10.20 and Section 10.23 of the NYCDEP Standard Sewer and Water Main Specifications.

8.53WFR.2. DESCRIPTION.

A flagged condition is defined to be a deficient condition in the retaining wall identified during the construction as requiring work to facilitate maintenance and protection of traffic.

Flagged repairs shall include, but not be limited to:

a) Shifted or collapsed sections of wall including concrete coping on top;
b) Utility repairs.

8.53WFR.3. METHODS.

The method for the repair of existing retaining walls shall be as directed by the Engineer.

All work shall be performed in accordance with the applicable section of the NYCDOT Standard Highway Specifications.

8.53WFR.4. MEASUREMENT.

The contract price for this item shall be a Fixed Sum of the amount as shown against this item in the Bid Schedule. The Bidder shall not alter this pre-entered amount. Should the amount shown be altered, the altered figures will be discarded and the pre entered price and amount will be used to determine the total amount bid for this contract.

No guarantee is given that this fixed price item will in fact be required in this contract. The estimated price for this item in the Bid Schedule is included in the total bid solely to insure a method of payment for this work.

8.53WFR.5. PRICE TO COVER.

Payment made under this Item shall be equal to the sum total of all vouchers submitted by the Contractor as payment for the cost of performing retaining wall flag repairs per as approved by the Engineer. Payments shall be in accordance with Article 26 of the Standard Construction Contract. Payment under this item, including partial payments, will not be made until the Contractor has furnished satisfactory evidence to the Engineer that the Contractor has performed the required retaining wall flag repairs.

The voucher for the payment shall be submitted to the Engineer on a monthly basis.

Payment will be made under:

Item No.	Item	Pay Unit
8.53 WFR	RETAINING WALL FLAG REPAIRS	FIXED SUM

SECTION PK-482 B
REMOVING AND REINSTALLING EXISTING PLAQUES

PK-482B.1. DESCRIPTION.

Under this item the Contractor shall remove and reinstall one (1) Plaque where directed in accordance with the plans, the specifications, and the directions of the Engineer.

PK-482B.2. SUBMITTALS.

Shop Drawing: The Contractor shall submit a shop drawing indicating the proposed concrete foundation for the Engineer's approval.

PK-482B.3. MATERIALS.

Existing Plaque: Existing metal plaque with embedded anchors to be salvaged for reinstallation.

Concrete Footings: Concrete for footings shall be Class B-32, Type IIA; cement - Type II Portland; sand - Type 1A; coarse aggregate Type 1, Grade B, or Type 2, Size No. 57; and an approved air-entraining agent shall be added at the time that concrete is mixed. Concrete, cement and aggregate shall comply with the requirements of NYC DOT Section 3.05

Setting Bed: Latex modified mortar, Type M (ASTMC-270). Admix shall be Laticrete 8510, manufactured by Laticrete International, Inc., Bethany CT., or approved equal.

PK-482B.4. METHODS.

Remove existing plaque with embedded anchors using such means as to not damage either. Remove excess materials, including but not limited to, concrete foundation material, as necessary to leave no visual remnants of excess materials upon reinstallation in new location.

Prior to placement of concrete foundation when reinstalling existing plaque, subgrade shall be compacted. Concrete foundation shall be as directed by the Engineer. The plaque shall be installed at a height and position equal to the existing installation.

PK-482B.5. MEASUREMENT.

The quantities to be measured for payment shall be the number of PLAQUES actually installed at the site, to the satisfaction of the Engineer.

PK-482B.6. PRICE TO COVER.

The price bid shall be a unit price for removing and reinstalling EACH existing plaque and shall include the cost of all labor, material, equipment, insurance, and incidentals necessary to complete the work in accordance with the plans, the specifications, and the directions of the Engineer. The work under this item shall also include the cost of all excavation, removal and disposal of debris of the existing foundation, furnishing and installing new concrete foundation, stainless steel dowels, fasteners, cleaning, polishing and storing and all incidental work thereto.

Payment will be made under:

Item No.	Item	Unit
PK-482B	REMOVING AND REINSTALLING EXISTING PLAQUES	EACH

(NO TEXT THIS PAGE)

SW - PAGES

SEWER AND WATER MAIN REVISIONS TO SPECIFICATIONS

NOTICE

The Standard Sewer And Water Main Specifications of the Department of Environmental Protection (dated July 1, 2014), Sewer Design Standards of the Department of Environmental Protection (dated (September 2007) Revised January 2009), Water Main Standard Drawings of the Department of Environmental Protection (latest revisions), and Specifications For Trunk Main Work of the Department of Environmental Protection (dated July 2014) shall be included as part of the contract documents. These said specifications and standard drawinwgs are hereby revised under the following section headings:

A. NOTICE TO BIDDERS
B. REVISIONS TO THE STANDARD SEWER AND WATER MAIN SPECIFICATIONS
C. REVISIONS TO THE SPECIFICATIONS FOR TRUNK MAIN WORK

(NO TEXT ON THIS PAGE)

A. NOTICE TO BIDDERS

(1) The Contractor is notified that a Notice To Proceed (NTP) date will be issued for work to commence within twenty-one (21) to thirty (30) days of Contract Registration.

(2) The Contractor shall furnish, install, maintain and subsequently remove temporary Protective Tree Barriers. Protective Tree Barriers shall be Type B, unless otherwise directed by the Engineer, and shall be constructed and installed as shown on the Protective Tree Barrier sketch in Department Of Transportation, Standard Highway Details Of Construction, Drawing No. H-1046A, as directed by the Engineer, and in accordance with Department of Parks and Recreation requirements.

(3) All utility locations and invert elevations are not guaranteed, nor is there any guarantee that all existing utilities, whether functional or abandoned within the project area are shown.

(4) All existing house connections shall be maintained and supported during construction. The Contractor shall replace any existing house connection damaged as a result of the Contractor's construction operations as ordered by the Engineer at no cost to the City.

(5) The Contractor is advised that any City owned light poles, traffic signals, street name signs, traffic signs and encumbrances including, but not limited to, underground conduit displaced as the result of the installation of the new sewers, water mains, catch basins, catch basin connections and appurtenances shall be replaced in kind and as directed by the Engineer. The cost of such work shall be deemed included in the prices bid for all items of work under this contract.

(6) The Contractor is notified that Victaulic Style 77 Coupling is no longer acceptable for use in any steel water main work. All reference to Victaulic Style 77 Coupling within the Standard Sewer And Water Main Specifications of the Department of Environmental Protection (dated July 1, 2014), the Water Main Standard Drawings of the Department of Environmental Protection (latest revisions), the Specifications For Trunk Main Work (dated July 2014), and the contract drawings, shall be replaced with Bolted Split-Sleeve Restrained Coupling.

(7) The Contractor is notified that wherever the Item No. "6.52" and words "flagger", "flagperson" and "flagman" are used in the contract documents and drawings it shall mean the Item No. "6.52 CG" and the words "Crossing Guard", respectively. The Contractor is advised that until the Comptroller of the City of New York sets a prevailing wage rate for crossing guards, there are no prevailing wage rates for crossing guards.

(8) The Contractor is notified that the fuel cost per gallon used in the formula under **Sub-Article 26.2.8** of the Standard Construction Contract for **Extra Work** will be derived from the fuel price index for the United States East Coast published weekly by the United States Energy Information Administration ("USEIA"), and available on its website at http://www.eia.gov/petroleum/gasdiesel/ . The USEIA published cost per gallon for the applicable fuel on the East Coast for the week in which the first day of each calendar quarter during the contract term occurs (i.e., January 1st, April 1st, July 1st and September 1st) will be used in the reimbursement formula for all **Extra Work** invoiced that was performed during that calendar quarter. Should the USEIA stop publishing this fuel price index, the fuel cost per gallon will be determined by reference to a substitute index to be agreed upon by the Contractor and the City.

(9) The Contractor is responsible for any damage to the existing street and traffic signal equipment, including underground conduits and the safety of both pedestrian and vehicular traffic for the duration of the contract.

(10) Should any conduits, cables or foundations need repair due to the Contractor's negligent operations during construction, all work shall be performed according to NYCDOT Bureau of Traffic's Standard Drawings and Specifications at the sole expense of the Contractor.

(11) It is the Contractor's responsibility to secure an approved electrical contractor to perform all traffic signal work (if any). For list of approved electrical contractors, contact Mr. Michael R. LeFosse of New York City Department of Transportation at (718) 786-2236.

(12) The Contractor is advised that where the existing roadway pavement is designated to be replaced from curb to curb, then no full depth saw cutting of pavement for sewer and water main trenches will be required, except at the limits of full width pavement restoration. No separate or additional payment will be made for any saw cutting.

(13) The field office shall be within ½ mile of the job site. Field offices located further than ½ mile from the job site shall require approval by the Assistant Commissioner for Construction."

(14) The Contractor is notified that other contractors may be working in the area under NYCDOT's City Island Bridge Replacement Contract. The Contractor may need to coordinate his operations with other contractor's accordingly.

(15) A Geotechnical Data Report (375 pages) is provided as an attachment to these SW-Pages, and is located at the end of this Volume 3 of 3.

(NO FURTHER TEXT ON THIS PAGE)

B. REVISIONS TO THE STANDARD SEWER AND WATER MAIN SPECIFICATIONS

(1) **Refer** to **Subsection 10.15 - Notice To Utility Companies, Etc., To Remove Structures Occupying Place Of Sewers, Water Mains Or Appurtenances**, Page I-11:

Add the following to **Subsection 10.15**:

(1) CONSOLIDATED EDISON COMPANY OF NEW YORK (CON EDISON)

There are CON EDISON facilities in the area of construction. The Contractor shall notify CON EDISON at least seventy-two (72) hours prior to the start of construction by contacting Mr. Kirt Blackman at (718) 802-3005.

(2) VERIZON/DEWBERRY

There are VERIZON/DEWBERRY facilities in the area of construction. The Contractor shall notify VERIZON/DEWBERRY at least seventy-two (72) hours prior to the start of construction by contacting Mr. Michael Lacanlale at (646) 434-2850.

(3) CABLEVISION

There are CABLEVISON facilities in the area of construction. The Contractor shall notify CABLEVISON at least seventy-two (72) hours prior to the start of construction by contacting Mr. Andre Diaz at 718-861-7353 .

(2) **Refer** to **Subsection 10.21 - Contractor To Notify City Departments**, Page I-13:

Add the following to **Subsection 10.21**:

(1) N.Y.C. D.E.P., BUREAU OF WATER AND SEWERS OPERATIONS

The Contractor shall notify Mr. Peter Gordon, P.E., Chief, Linear Capital Program Management Division at the Department of Environmental Protection, 59-17 Junction Blvd., 3rd floor low rise, Corona N.Y. 11368, at least thirty (30) days prior to the start of construction.

(2) NEW YORK CITY FIRE DEPARTMENT

The Contractor shall notify the Bureau of Fire Communications at least thirty (30) days prior to the start of construction by contacting Mr. Nick Varone at (718) 624-4194 or (718) 624-3752.

(3) N.Y.C. DEPARTMENT OF TRANSPORTATION

The Contractor shall notify Mr. Joshua Benson, Associate Deputy Commissioner for Traffic Operations, at (212) 839-3350, at least seventy-two (72) hours prior to the start of construction.

(4) N.Y.C. DEPARTMENT OF PARKS AND RECREATION

The Contractor shall notify the Parks Department at least seventy-two (72) hours prior to the start of construction by contacting Mr. Daniel Grulich at (718) 760-6927.

(5) N.Y.C. TRANSIT AUTHORITY

The Contractor is advised that bus routes as well as bus stops, within the scope of this project may be affected during construction operations. The Contractor shall notify the Transit Authority at least two (2) weeks prior to the start of construction, in order to make the necessary arrangements.

Arrangements shall be made through:

Ms. Sarah Wyss
Director Of Short Range, Bus Service Planning (SRB)
New York City Transit
2 Broadway, 17th Floor
New York, N.Y. 10004
Telephone No. (646) 252-5517
sarah.wyss@nyct.com

(3) **Refer** to **Subsection 10.30 - Contractor To Provide For Traffic**, Page I-15:

Add the following to **Subsection 10.30**:

(1) Traffic Stipulations:

The Contractor shall refer to the Traffic Stipulations (five (5) pages) that are attached to the end of this section, and as directed by the Engineer.

(4) **Refer** to Page VI-45:

Add the following new **Section 60.32**:

SECTION 60.32

WATER MAIN IN HORIZONTAL DIRECTIONAL DRILLED STEEL SLEEVES

60.32.1 INTENT

This section describes construction of ductile iron water main carrier pipe in horizontal directional drilled steel sleeves.

60.32.2 DESCRIPTION

(A) GENERAL

(1) The sleeves and water main carrier pipes shall be constructed to the sizes, kinds, classes and wall thicknesses of pipe specified and in accordance with the details shown on the contract drawings. The construction of the water mains herein shall be by means of the horizontal directional drilling of a steel sleeve with the use of horizontal directional drilling techniques and the insertion of a carrier pipe. The horizontal directional drilling operation shall be performed within the areas shown on the contract drawing

Horizontal Directional Drilling shall be defined as a surface-launched, guided, steerable drilling system used for the trenchless installation of pipes. The Drilling Rig shall be capable of adequately and safely completing the bores and pullbacks required in order to install the steel sleeves, complete, together with the insertion of the water main carrier pipes.

(2) It shall be the Contractor's responsibility to prepare the entry site and exit site areas (i.e., tree and stump removal, cleaning and grubbing, temporary access way, placement of water tight sheeting and/or cofferdams, pumping, excavation and support methods, etc.) and to choose the type of drilling rig and its equipment and accessories (i.e., steerable directional boring equipment, mud plant, operator control cabin, pumps, hoses, etc.) to be used to complete the horizontal directional drilling bore.

The Contractor shall replace any equipment deemed necessary in order to complete the horizontal directional drilling bore. This includes the rock and/or soil cutter reamers for pilot bores and additional reams and any other required equipment. No additional or separate payment will be made for any equipment replacement that is required to complete the horizontal direction drilling bore.

(B) GEOTECHNICAL CONDITIONS

Geotechnical data provided by the City is for information purposes only. The Contractor shall perform all necessary geotechnical investigations to ensure that the type of drilling rig (together with equipment and accessories) the Contractor chooses to use is capable of completing the bore and remove all materials (i.e. soil, boulders, rock, etc.) encountered.

The Contractor shall thoroughly investigate the geotechnical conditions of the strata through which the horizontal directional drilled bore is to be accomplished. After performing this thorough investigation, the Contractor shall prepare a construction report in accordance with **Section 76.11 - Construction Report** for the approval of the Engineer. (See **Subsection 60.32.3 - Submittals, paragraph (1)**).

60.32.3 SUBMITTALS

The Contractor shall submit the following:

(1) Before commencing any operations associated with the construction of water mains in horizontal directional drilled steel sleeves the Contractor shall submit the construction report specified above. In addition to the requirements specified in **Section 76.11**, the construction report shall contain all investigative geotechnical information and determinations as to directional boring feasibility, and all means and methods of construction that will be required to complete the directional bores. The Construction Report shall also state the Contractor's assumptions regarding the subsurface conditions will be encountered during directional boring construction.

(2) Before commencing any operations associated with the construction of water mains in horizontal directional drilled steel sleeves the Contractor shall submit the following:

(a) Equipment Layout Plan: The plan shall provide sketches depicting the layout and locations of equipment within the rig side work area and pipe side work area, including any proposed drilling fluid containment and recirculation equipment and/or pits. It shall also provide the means and methods utilized to ensure that the construction operation will be completely contained within the permanent and temporary construction areas unless otherwise shown on the contract drawings and/or as approved by the Engineer.

(b) Schedule: At least fifteen (15) working days prior to mobilization for horizontal directional drilling operations, the Contractor shall submit a detailed schedule for the horizontal directional drilling installation showing all major construction activities and durations, with beginning and completion dates shown. The schedule shall be updated and resubmitted weekly or as directed by the Engineer, and shall include, but not be limited to, the following:

(1) "One call" utility locate requests and visual confirmation of all crossing utilities and all parallel utilities within the vicinity of the bore centerline.
(2) Rig mobilization and setup including tree removal, cleaning and grubbing, etc. to prepare entry and exit sites.
(3) Pilot bore drilling.
(4) Pre-reaming and reaming.
(5) Layout and welding/fusing/connecting of pipe.
(6) Final reaming and pullback of steel sleeve pipe.
(7) Cleaning of steel sleeve pipe.
(8) Pullback of carrier pipe.
(9) Pressure testing of carrier pipe after installation. (Before grouting)
(10) Grouting of the annular space between steel sleeve and carrier pipe.
(11) Pressure testing of carrier pipe after grouting.
(12) Cleanup, surface restoration, and demobilization.

(c) Machine specifications (including but not limited to equipment, accessories, means and methods of spoil removal) together with a letter from the drilling rig machine manufacturer demonstrating that the selected machine together with equipment, accessories and means and methods of spoil removal is capable of progressing through the anticipated subsurface conditions, and capable of removing spoils effectively.

(d) Drill Rig Capacity Plan: The plan shall provide details on the capacity of the drill rig verifying that the pullback capacity is greater than the required pullback calculation submittals specified herein below.

(1) Pullback Calculations for Steel Sleeve - The Contractor shall submit calculations for pipe stresses expected to result from all loads, including the pullback, bending, fluid buckling, earth, groundwater, and any other installation and service loads expected to be exerted on the pipe. All assumptions used in the calculations, including the radius of curvature, assumed drilling fluid weights, and whether pipe is assumed to be filled or empty during pullback, and temperature shall be provided.
(2) Pullback Calculations for Carrier Pipe - The Contractor shall submit calculations for pullback loads for the conditions and operating practices anticipated.

(e) Horizontal Directional Drilling Work Plan: The plan shall be complete with drawings and written description identifying details of the proposed means and methods of construction and the sequence of operations to be performed during construction.

(1) The plan shall include a detailed plan and profile of the bore showing any proposed deviations from the contract drawings and plotted at a scale no smaller than one (1) inch equals forty (40) feet horizontal and one (1) inch equals four (4) feet vertical.
(2) The plan shall provide details of the planned bore path and the method for monitoring and controlling the speed, line, grade and rate of fluids delivery. It shall include the sequence, size, and description of each reamer and capabilities of each through anticipated geologic formation. The drill plan shall also include details on the swabbing of the borehole prior to pullback of the pipe.
(3) Included in this plan shall be records of equipment calibrations and certifications for all equipment used for downhole surveys and tracking of the drill head together with a complete description of the surveying equipment and methods to be utilized. Procedures for operating the downhole survey tools shall be described, including measures to verify the accuracy of the equipment readings. Data recorded during pilot hole drill shall include x, y, z coordinates of drill head and joint deflection angles.

(f) Radius of Curvature Confirmation: The Contractor shall confirm that the bore can be completed using the radius of curvature and geometry shown on the contract drawings along with the calculations showing that installation stresses do not exceed allowable pipe stresses. This confirmation shall apply to both the steel sleeve and the carrier pipe.

(g) Disposal of Spoils and Drilling Fluids Plan: The plan shall specify the means and methods for the disposal of waste materials resulting from the pipeline construction, including drilling fluids, cuttings, discharge water, etc. The Contractor shall identify the disposal site and submit a letter from the disposal site stating its willingness and legal authority to accept the described and anticipated waste products.

(h) Spoil (Rock and Soil) Separation Plan: The plan shall describe the solids control plant and provide details on the pump and spoil separation plant. Include dimensions, manufacturer's specifications, pump capacity, noise rating, and soundproofing details on the system.

(1) Pump capacity should be specified for water at sea level elevation, and adjusted for actual elevation and fluid viscosity.
(2) Provide details on the generator, including dimensions, noise ratings at twenty-five (25) feet, and soundproofing. Confirm that the generator and other on-site equipment can be operated without exceeding the maximum allowable noise tolerances specified by local noise ordinances.

(i) Maximum Allowable Drilling Fluid Pressure Calculations: The Contractor shall submit calculations identifying the critical downhole pressure that would cause hydrofracture or inadvertent return of drilling fluid. The calculations shall identify the critical points in the alignment beneath the channel and near the exit point where the ground cover above the bore is low. The calculations shall identify all parameters used and state all assumptions made in the calculations, and shall include the drilling fluid formulation.

(j) Protection of Adjacent Structures and Facilities Plan: The plan shall provide details on measures to be taken to monitor and protect adjacent utilities, structures, roadways and sidewalks within or in the vicinity of the entry and exit sites, and provide details on monitoring equipment and provisions, including the layout of all settlement points and other monitoring points. Provide two (2) copies of preconstruction survey of adjacent structures and photographs with captions to document preconstruction conditions prior to beginning horizontal directional drilling construction.

(k) Noise Reduction/Abatement Plan: The plan shall identify all sources of potential noise problems and noise reduction/abatement measures that will be taken during construction.

(3) Prepare and submit a proposed contingency plan for remediation of potential situations that may occur during horizontal directional drilling operations. The Contractor shall submit a letter signed by the Contractor's authorized representative that the submitted proposed contingency plan for remediation of these potential situations will be adhered to. This submittal shall at a minimum address the following scenarios:

(a) Encountering obstruction during pilot bore or reaming/pullback.
(b) Drill pipe or sleeve pipe cannot be advanced.
(c) Deviations from design line and grade (planned bore path) exceed allowable tolerances. Describe which operational parameters will be observed/measured/recorded so that it can be determined if the above are occurring or have just occurred.
(d) Loss of returns/loss of circulation of drilling fluids.
(e) Inadvertent returns (frac-out/hydrofracture) or surface spills resulting in drilling fluids entering water or reaching surface. Stand-by equipment shall be provided by the Contractor to recover fluids. Turbidity barriers shall be part of the stand-by equipment to minimize dispersion in the event that drilling fluids reach the surface.
(f) Drill pipe or sleeve pipe broken off in borehole.
(g) Carrier pipe cannot be advanced.
(h) Separation of sleeve pipe or carrier pipe during installation.
(i) Sleeve pipe or carrier pipe collapse or experience excessive deformation.
(j) Excessive pressure during grouting of annular space between carrier pipe and sleeve pipe.
(k) Incomplete grouting of annular space between carrier pipe and sleeve pipe.
(l) Failure of equipment during grouting
(m) Excessive ground settlement or heave.
(n) Hydolock occurs or is suspected.
(o) Utility strike.

(4) Unless otherwise provided for in the contract documents, a proposed plan showing locations of required geotechnical instrumentation and any other Contractor proposed instrumentation. Include product information indicating the instrumentation sizes, material types, specifications, installation procedures, locations and other pertinent data. The instrumentation installation specialist performing the installation of the geotechnical instrumentation shall have adequate experience; proof of this experience shall be included with this plan.

(5) Proposed insertion plan for grout fill of annular space between the water main carrier pipe and steel sleeve. Grouting fill of annular space plan shall include details of grout fill materials (including source), installation procedures, equipment utilized, grout fill quality control measures, and means of protecting new water main facilities during grout fill placement. Such method shall be capable of filling all voids between the steel sleeve and the carrier pipe for the entire length, and shall not be capable of damaging the water main carrier pipe and it's jointing, nor capable of damaging or misaligning the brace and support spacers installed to align and insulate the water main carrier pipe, nor cause any leakage of grout to the outside soil area of the steel sleeve.

(6) Shop drawings shall be submitted in accordance with all applicable provisions of **Subsection 40.05.5 - Shop Drawings**, as required. Design criteria shall be submitted in accordance with all applicable requirements of **Subsection 40.05.6 - Design Criteria**, as required.

(7) The Contractor shall allow a minimum of four (4) weeks for review.

(8) All the above shall be submitted as a complete package. All designs and calculations shall bear the signature and seal of a Licensed Professional Engineer, currently registered in the State of New York

(9) No work associated with the construction of water mains in horizontal directional drilled steel sleeves shall commence until the Contractor receives all required approved shop drawings and submittals from the Department of Design and Construction, Division of Infrastructure.

(10)The following shall be submitted as construction progresses and at the completion of construction.

(1) Daily Logs and Records: The Contractor shall submit complete, legible, written daily logs and records as directed by the Engineer, by noon of the following day to which the records correspond. Daily logs and records shall include the following:
(a) drilling lengths,
(b) location of drill head,
(c) drilling fluid pressures and flow rates,
(d) drilling fluid loss volumes,
(e) inadvertent return volumes (frac-out),
(f) drilling times required for each pipe joint,
(g) any instances and lengths of retraction and re-drilling of the pilot bore or segments thereof,
(h) any other relevant observations, including any observed settlement, heave, frac-outs , surface spill, and,
(g) any other data required by the Engineer.

(2) Drilling and Reaming Rates: The Contractor shall submit maximum drilling speeds and reaming rates for pilot bore and each reaming pass and confirm that the pump capacity is adequate for these anticipated drilling rates for the mud and/or drilling fluid weights and viscosities anticipated. These shall be submitted to the Engineer on a daily basis.

(3) Drilling Fluid Viscosity and Density (Mud Weight): The Contractor shall submit measured mud and/or drilling fluid weights used during pilot boring, reaming of the bore, and pull back measured at a minimum of three (3) times per shift or at least once for each 200-feet of drilled or reamed length, whichever is more frequent, with at least two (2) hours between readings.

(4) Pilot Bore As-Built Plan and Profile: The Contractor shall submit an as-built plan and profile of the pilot bore within twenty-four (24) hours of completion of the pilot bore.

(5) Pressure Test Records: The Contractor shall submit all carrier pipe pressure test records for both the pre-grouting and post-grouting tests. These shall be submitted within twenty-four (24) hours of completion of such tests.

(6) Variations in Plan and Profile: The Contractor shall document any variations between the actual contract drawings and the plan and profile of the bore path and the location shown on the contract drawings. The Contractor shall notify the Engineer immediately upon discovery of any deviations. Such notification shall be followed by a written explanation of the deviations.

60.32.4 MATERIALS

(A) Ductile iron carrier pipe shall comply with the requirements of **Section 20.01 - Specifications For Ductile Iron Pipe And Accessories (Section 2.01)**. Ductile iron fittings shall comply with the requirements of **Section 20.02 - Specifications For Ductile Iron Fittings And Accessories (Section 2.02)**. Ductile iron carrier pipe and fittings shall be shown to be capable of withstanding the installation loads (pullback forces and bending forces).

(B) Ductile iron joints shall be restrained joint, and shall be; TR-Flex, as manufactured by U.S. Pipe Company, Birmingham, Alabama; Flex Ring as manufactured by ACIPCO Birmingham Alabama; TR Flex as manufactured by McWane Ductile, Phillipsburg, N.J.; or approved equal. The joints shall be pressure rated for 150-psi. The joints shall be shown to be capable of withstanding the installation loads (pullback forces and bending forces).

(C) Steel Sleeves shall have an outer diameter (O.D.) and a minimum sleeve thickness as shown or specified on the contract drawings. The steel shall conform to ASTM A134 and be welded from ASTM A283, Grade C plates. Certifications per ASTM A134 section 18.1, shall be provided. The horizontal

directional drilled steel sleeve shall be designed to withstand pullback forces and bending forces as well as external loads (including but not limited to skin friction, friction due to weight of pipe, face pressure due to strata type, and face pressure required to counteract fluid pressure). When calculating pullback stress on the steel sleeve, 2.5 times the calculated pullback force shall be used. Hydrostatic tests will not be required for steel sleeves.

All connections between successive steel sleeve pipe lengths shall be continuously welded with a single vee-butt joint. Beveling shall be done by automated means, free-hand beveling will not be allowed. Welds shall be made in conformance with AWS D1.1. All welders shall possess a current New York City Department of Buildings welding card. All weld procedure specifications (WPS) shall be submitted for approval.

(D) Grout utilized to fill the voids between the steel sleeve and the water main carrier pipe and the steel containment casing pipe and the steel sleeve shall be Low Weight Cement Grout as described below:

Low Weight Cement Grout:

(a) Grout shall consist of sanded Portland cement, water, Mearlcrete Foam Liquid concentrate and other materials as manufactured and recommended by the Mearl Corporation or approved equal.
(b) Portland cement shall comply with the requirements of **General Specification 11 - Concrete, as modified in Section 23.01**, and shall be Type I / II.
(c) Mixing water shall be a maximum of six (6) gallons per bag of cement (water/cement ratio is 0.53), and be potable, from New York City mains.
(d) Wet Density shall be 95-lb/ft^3 maximum.
Dry Density shall be 90-lb/ft^3 maximum.
Minimum 7-Day Compressive Strength shall be 300-psi.
Minimum 28-Day Compressive Strength shall be 1,000-psi.
(e) Mix design shall be approved by the Engineer.

(E) Steel Containment Casing Pipe shall comply with the requirement of **Subsection 60.32.4(C)**. The minimum nominal diameter of the steel containment casing pipe shall be sufficient to accommodate the largest ream. The steel containment casing pipe shall be as shown on the contract drawings.

(F) Drill pipe shall be high quality drill pipe that has been inspected and determined to be adequate for the project requirements. Bent, racked, or fatigued drill pipe shall not be used for bores. Threads must be in good condition. The length of each drill pipe shall be measured and recorded.

(G) Drilling Fluid shall be designed for the geologic conditions to be encountered at the site, and shall provide for suspension, bore stability, filtration control, and help reduce torque and drag in boring-fluid applications. It shall achieve viscosity for bore cleaning, developing gel strength for cuttings suspension, transport, bore stability, fluid-loss control and filter-cake quality in freshwater and seawater applications. The drilling fluid shall be non-toxic and environmentally safe. Management and disposal of drilling fluids shall be the Contractor's responsibility. Drilling fluids shall not be disposed of on-site or discharged to any sewer system or water way.

60.32.5 METHODS

(A) GENERAL

(1) The Contractor's shall provide barricades, fencing, or other safety measures to prevent public access into work and staging areas. The Contractor's safety measures shall be approved by the Engineer prior to their implementation.
(2) The Contractor shall provide adequate control of surface water and drilling fluids drainage and runoff, and provide silt fences, straw bales, and wattles to prevent surface water or drilling fluids from being transported off-site. The Contractor's control measures shall be approved by the Engineer prior to their implementation.

(3) The contract drawings show existing structures and utility facilities that are within twenty (20) feet adjacent to and crossing the centerline of the designed horizontal directional drilling path. There is no guarantee that these structures and utility facilities are located as shown or that other structures or utility facilities are not present. Prior to the start of drilling operations, it will be the Contractor's responsibility to locate, confirm and mark or have marked all structures and utility facilities within

the areas specified above. Where ordered by the Engineer, due to the close proximity of the structures and/or utility facilities to the drilling path, the Contractor shall excavate and expose portion(s) of the structure(s) and/or utility facility(ies) for visible inspection during the drilling operation.

(4) The Contractor shall provide all equipment and means and methods to control drilling practices so as to prevent damage to existing structures and utility facilities. The Contractor shall be responsible for any damage to the existing structures and utility facilities caused by the Contractor's drilling operations and shall repair or replace such structures and/or utility facilities at the Contractor's sole expense and at no cost to the City.

(B) WORK STAGING AREA

An Entry Site Area has been secured in the Bronx, and an Exit Site Area has been secured on City Island for construction operations. These areas are shown on the contract drawings. Any additional

area(s) the Contractor may require for staging shall be requested in writing to the Engineer prior to the start of construction operations. Such additional area(s), if granted by the Engineer in writing, shall be set-up complete as directed by the Engineer. Payment for set-up of the additional area(s) will be made under the appropriate bid items, where there is no bid item(s) the cost for work shall be deemed included in the prices bid for all items of the contract. The Contractor shall visit the proposed area prior to submitting a bid for this work.

The Contractor shall limit all staging and work operations to the areas (Entry Site and Exit Site), or as otherwise accepted in writing by the Engineer, for mobilization and storage of all equipment, materials, personnel, parking, drilling and other work. The easements and accessways are available to the Contractor for unloading equipment and materials.

All work within the Entry Site Area, Exit Site Area or any additional area(s) granted shall be performed in the dry.

All excavation work, fill work, cofferdam work, earthwork, earth moving work, etc., to be performed in the Entry and Exit Site Area shall be approved in writing by the Engineer.

In addition, the following shall apply:

(1) Entry Site Area (Bronx): The Contractor shall set up temporary workspace within the area delineated on the contract drawings. Appropriate precautions and measures shall be employed by the Contractor to prevent erosion, surface drainage, and spillage of drilling fluids or other materials that could adversely impact the environmental quality of the site. Silt fences, straw wattles, and straw bales shall be used to line the work area to minimize erosion and contain any spillage or runoff. Shovels, brooms, buckets, and barrels shall be kept on-site to facilitate containment and cleanup. A vacuum truck or trailer unit will be on standby and capable of responding within one hour to any spill or inadvertent return incident.

(2) Exit Site Area (City Island): The exit area shall have a drilling fluid pit for containing drilling fluids and cuttings. Silt fences, straw wattles and straw bales shall be used to line the work area to minimize erosion and contain any spillage or runoff. Containment and cleanup equipment shall be available to contain and clean up any surface spills and frac-outs.

(3) Pipe Layout Area: No separate additional area is provided for pipe layout. Pipe layout and assembly areas shall be free of stones, wood, debris, and obstructions. Pipe rollers shall be provided by the Contractor during the welding process to facilitate pipe welding and pullback. The Contractor is notified that the pipe layout area will not allow for the joining of the entire pipe length to be installed. The Contractor shall perform the jointing in stages. Pipe layout may be performed at either the entry or exit site area.

(4) The Contractor shall install a temporary 6-foot high chain link fence around Entry Site Area, Exit Site Area and additional area(s). The location of access gates shall be coordinated with the Engineer prior to the start of construction operations. The enclosure fence shall be adequate to prevent entry of unauthorized persons.

(5) Barricades, Warning Lights, and Signs: The Contractor shall, in accordance with approved Traffic and Safety Plans, erect approved barriers, warning lights, and signs to ensure adequate warnings to personnel and the public.

(6) Temporary Lighting: The Contractor shall procure and maintain all temporary lighting needed for Contractor's operations, safety, testing, and inspection. Temporary lighting shall be removed immediately after completion of construction.

(7) Combustible Materials: Combustible materials (fuel, oil, lubricants, etc.) shall be stored off-site or in a well-ventilated storage facility, in compliance with New York City Fire Department requirements, removed from the immediate vicinity of the drilling area by at least twenty (20) feet.

(8) Construction Impacts: The Contractor shall maintain the work areas in a manner that shall minimize adverse impacts on other public use activities. The Contractor shall proceed with work in a safe, orderly manner, while maintaining the work site free of debris and unnecessary equipment and materials. The Contractor shall take all measures possible to ensure the maintenance of transportation routes free of debris, spillage, etc.

(9) Control of Drilling Fluids: The Contractor shall follow all requirements of the Inadvertent Return (frac-out) and Surface Spill Contingency Plan as submitted and approved and shall control operational pressures, drilling mud weights, drilling speeds, and any other operational factors required to avoid hydrofracture fluid losses to formations, and control drilling fluid spillage. This includes any spillages or returns at entry and exit sites or at any intermediate point(s). All inadvertent returns (frac-out) or spills shall be promptly contained and cleaned up by the Contractor. The Contractor shall maintain on-site mobile spoil removal equipment during all drilling, pre-reaming, reaming, and pullback operations and shall be capable of quickly removing spoils. The Contractor shall immediately notify the Engineer of any inadvertent returns (frac-out) or spills and immediately contain and clean up the return or spill.

(10) Removal of Temporary Facilities: At the completion of construction, the Contractor shall remove all temporary facilities installed by the Contractor. Watertight sheeting, cofferdams, fill, excess and unused soil, aggregate, and other materials shall be removed and disposed of at approved sites in accordance with Federal, State, and Local regulations. Any damage to streets, lawns, common areas, and sidewalks shall be restored to original or better conditions. All work areas disturbed shall be restored and re-vegetated as shown, specified or ordered by the Engineer.

(C) CONTROL OF LINE AND GRADE

(1) Lines and grades shall conform to the requirements of **Subsection 10.09** and as amended herein. The Contractor shall establish the baselines and benchmarks in accordance with this contract.

(2) The Contractor shall submit to the Engineer copies of field notes used to establish all lines and grades. However, the Contractor remains fully responsible for the accuracy of the Contractor's work.

(3) Bore Tracking and Monitoring: At all times during the pilot bore the Contractor shall provide and maintain a bore tracking system that is capable of accurately locating the position of the drill head in the x, y, and z axes. The Contractor shall record these data at least once per drill pipe length or every thirty (30) feet, whichever is less.

(4) Downhole and Surface Grid Tracking System: Contractor shall monitor and record x, y, and z coordinates relative to an established surface survey benchmark, from downhole survey data using a downhole wireline system. The data shall be continuously monitored and recorded at least once per drill pipe length.

(5) Deviations between the recorded and design bore path shall be calculated and reported on the daily log. If the deviations exceed tolerances specified, such occurrences shall be reported immediately to the Engineer. The Contractor shall undertake all necessary measures to correct deviations and return to design line and grade.

(D) EQUIPMENT

(1) Horizontal Directional Drilling Rig: The Drilling Rig shall be capable of adequately and safely completing the bores and pullbacks required in order to install the steel sleeves, complete, together with the insertion of the water main carrier pipes.

(2) Pump Capacity: The pumps used by the Contractor shall be adequate to supply the required flow rate and pressures at the anticipated drilling fluid viscosity at all times. Drilling speeds shall not exceed pump capacity. Drilling speeds shall be monitored continuously during horizontal directional drilling operations.

(E) HORIZONTAL DIRECTIONAL DRILLING AND INSTALLATION OF STEEL SLEEVE

(1) Location of Entry and Exit Points: Entry and exit points shall be as shown on the contract drawings, unless otherwise approved in writing by the Engineer. The Contractor shall locate the entry and exit points of the pilot hole and subsequent ream pass diameters, and to establish horizontal and vertical datum for the bore and the pipe layout and fabrication areas.

(2) Entry and Exit Angles: Drill entry and exit angles shall be as shown on the contract drawings, unless otherwise approved in writing by the Engineer.

(3) The Contractor shall install steel containment casing on both the Bronx and City Island sides, with a minimum nominal diameter of 60-inches to accommodate their construction methods and curtain drilling fluids as shown on the contract drawings. Once the 32-inch diameter steel sleeve pipe is installed, the annular space between the containment casing and steel sleeve pipe shall be filled with Low Weight Cement Grout in accordance with **Subsection 60.32.4(E)**.

(4) Pilot Bore: The pilot bore shall follow the design path of the bore shown on the contract drawings. The pilot bore can be done from the Bronx or City Island, whereas the subsequent ream passes will be done from the Bronx.

(1) Horizontal and Vertical Tolerances: Horizontal and vertical deviations shall not exceed plus or minus one (1) feet from the design path centerline. The Contractor shall continuously monitor horizontal and vertical position and record the position at least once per drill pipe length, or at thirty (30) feet, whichever is less.

(2) Radius of Curvature: The radius of curvature shall not be less than that shown on the contract drawings.

(3) Entry and Exit Tolerances: The location of the entry and exit points shall be in accordance with the approved Horizontal Directional Drilling Work Plan. The Contractor shall be responsible for all work necessary to correct excessive deviations from line and grade. The expense for this work (e.g., re-drilling, redesigning connections, etc.) shall be borne solely by the Contractor at no additional cost to the City.

(5) Pre-reaming and Reaming: The pilot bore shall be pre-reamed and reamed using equipment and methods submitted by the Contractor. The Contractor shall completely pre-ream the bore to the final diameter prior to pullback.

(6) Drilling Fluid Pressures and Flow Rates: Drilling fluid pressures and flow rates shall be continuously monitored and recorded by the Contractor. The pressure shall be monitored at the pump. These measurements shall be made during pilot bore drilling, reaming, and pullback operations.

(7) Drilling Speeds: Maximum allowable drilling speeds shall be calculated by the Contractor for pilot boring and each reaming pass and shall not be exceeded for pilot boring or reaming passes. Measurements shall be taken every thirty (30) feet or thirty (30) minutes, whichever is more frequent.

(8) Drilling Fluid Viscosity and Density (Mud Weight): The Contractor shall measure and record drilling fluid viscosity and density at least three (3) times per shift or at least once per 200-feet of drilled and reamed length, whichever is more frequent with at least two (2) hours between readings, using calibrated Marsh funnel and mud balance. Qualifications for drilling fluid testing personnel shall be approved by the Engineer. These measurements shall be included in daily logs submitted to the

Engineer. The Contractor shall document modifications to the drilling fluids, by noting the types and quantities of drilling fluid additives and the dates and times when introduced. The reason for the addition of drilling fluid additives or other modifications shall be documented and reported.

(9) Steel Sleeve Pipe Pullback:

(1) All ream passes must be done from the Bronx.

(2) A final swabbing of the bore path prior to pullback of the pipe is required.

(3) The pipe shall be installed by pulling it into the reamed bore path in a continuous operation (with planned interruptions for intermediate welds), behind a final reaming/swabbing tool selected by the Contractor.

(4) The pipe shall be isolated from excessive torsional and axial stresses by a swivel device.

(5) All measurements shall be made, recorded, and submitted on the daily logs during final reaming and pipe pullback.

(6) Pulling Loads: The maximum pull (axial tension force) exerted on the steel casing pipe shall be measured continuously and limited to the maximum allowed by the pipe manufacturer so that the pipe or joints are not overstressed. Steel sleeve pipe shall only be stressed to the maximum allowable stress.

(7) Pipeline Support: The pipelines shall be adequately supported during installation so as to prevent coating damage, overstressing or buckling. The Contractor shall provide adequate support/rollers along the stringing area to support the required length of the pipe for each bore. Such support/rollers shall be spaced as necessary, and the rollers be comprised of a non-abrasive material arranged in a manner to provide support to the bottom and bottom quarter points of the pipeline allowing for free movement of the pipeline during pullback. The pipe layout area shall be cleared of all large stones, construction debris, or other foreign objects that could damage the piping during pullback.

(8) The leading end of the pipe shall be closed during the pullback operation, in accordance with the pipe supplier's recommendations. A pulling head shall be used that is rated at the allowable pull force capability of the pipe section being installed, in accordance with the pipe supplier's recommendations.

(9) Each length of pipe shall be inspected and cleaned as necessary to be free of debris immediately before joining.

(10) The Contractor shall at all times handle the pipe in a manner that does not overstress or otherwise damage the pipe or exterior coating. Curvature of the pipe during handling and installation shall be limited to manufacturer's recommended bend radius so that wall stresses do not exceed the allowable bending radius as recommended by the pipe supplier. If the pipe is buckled or otherwise damaged due to Contractor's acts or omissions, the damaged section shall be removed and replaced by the Contractor at the Contractor's own expense. The Contractor shall take appropriate steps during pullback to ensure that the pipe, tracer wires and exterior coating will be installed without damage.

(11) The Contractor shall engage the services of an American Welding Society Certified Welding Inspector (AWSCWI) assurance and quality control during the pipe pullback operations. Pullback operations must never exceed the maximum allowable force or stress.

(12) The Contractor shall monitor and inspect pipe rollers and method for suspending pipe at entry during the pullback operation to avoid damage to the pipe.

(13) The Contractor shall cease operations if the pipe is damaged and shall remove the pipe from the bore and repair or replace the pipe before resuming installation. All pipe repairs shall be approved by the Engineer prior to repair.

(14) Damage to the pipe resulting from installation or contact grouting is the responsibility of the Contractor, including all costs for replacement, labor, materials, and equipment.

(15)Cleaning of the steel sleeve pipe shall be done in accordance with **Subsection 60.32.8(A)**.

(16)Immediately after the completion of the cleaning operations, the Engineer will conduct an inspection of the steel sleeve in accordance with **Subsection 60.32.9(A)**.

(F) OBSTRUCTIONS

The Contractor shall notify the Engineer immediately in the event that any obstruction is encountered that prevents further advancement of the drill pipe, or pullback of the pre-reamer, reamer, and/or pipe. The Contractor shall make all diligent and reasonable efforts to advance past the object by drilling slowly through the object, pulling back, and drilling along a new bore path that avoids the object, or excavating and exposing and removing the object, and all other reasonable attempts to continue the bore. The Contractor shall notify the Engineer on proposed measures to attempt to advance past the object, prior to initiating the attempt. If the Contractor attempts to pullback and re-drill, the Contractor shall adhere to line and grade tolerances established in this specifications, unless the Engineer approves a variance, in writing, prior to the Contractor's attempt to re-drill. The Contractor and Engineer shall investigate the cause and together determine an appropriate response. Appropriate response may include revisions to equipment or methods, retraction and re-drilling of a portion of the bore, or abandonment of the hole. If abandonment is deemed necessary, the Contractor shall recover, to the extent practicable, any drill pipe, product pipe, and tools in the bore, and properly abandon the bore by backfilling with grout unless otherwise directed in writing by the Engineer. If the bore is abandoned, the Contractor shall be allowed to begin a second attempt to install the pipeline at an alternate location subject to approval, in writing, by the Engineer. The Contractor shall take all reasonable actions to complete the installation with minimal delays. Extra costs associated with encountering a confirmed obstruction shall be paid for in accordance with **Articles 25 and 26** of the Contract.

(G) CARRIER PIPE PULLBACK

(1) The Contractor shall follow the recommendations of the pipe manufacturer regarding the installation of the water main carrier pipe. The recommended installation method used by the Contractor shall be such that no damage will occur to the carrier pipe when it is inserted.

(2) The Contractor shall install the water main carrier pipe approximately in the center of the steel sleeve. Water main carrier pipe shall be properly braced and supported with spacers that are electrically insulated from the steel sleeve. The brace and support spacers shall be installed and positioned in accordance with the manufacturer's recommendations and shall not inhibit the flow of grout. The Contractor shall submit design and method of bracing (including but not limited to type and location of spacers, and floatation design concerns) prior to installation of carrier pipe for approval by the Engineer. Proper precautions shall be taken by the Contractor to prevent floatation or motion of the carrier pipe during the grouting operation.

(3) The carrier pipe shall be installed by pulling it into the steel sleeve pipe in a continuous operation (with planned interruptions for joining of the water main carrier pipe) behind a tool selected by the Contractor.

(4) The pipe shall be isolated from excessive torsional and axial stresses by a swivel device.

(5) All measurements shall be made, recorded, and submitted on the daily logs during pipe pullback.

(6) Pulling Loads: The maximum pull (axial tension force) exerted on the water main carrier pipe shall be measured continuously and shall be limited to the maximum allowed by the pipe manufacturer so that the pipe or joints are not overstressed.

(7) Pipeline Support: The pipelines shall be adequately supported during installation so as to prevent coating damage, overstressing or buckling.

(8) The leading end of the pipe shall be closed during the pullback operation, in accordance with the pipe supplier's recommendations. A pulling head shall be used that is rated at the allowable pull force capability of the pipe section being installed, in accordance with the pipe supplier's recommendations.

(9) Each length of pipe shall be inspected and cleaned as necessary to be free of debris immediately before joining.

(10)The Contractor shall at all times handle the pipe in a manner that does not overstress or otherwise damage the pipe, pipe joint, exterior coating or interior lining. Vertical and horizontal curves shall be limited to manufacturer's recommended bend radius so that wall stresses do not exceed the allowable stress as recommended by the pipe supplier. If the pipe is buckled or otherwise damaged due to Contractor's acts or omissions, the damaged section shall be removed and replaced by the Contractor at the Contractor's own expense. The Contractor shall take appropriate steps during pullback to ensure that the pipe, exterior coating and interior lining will be installed without damage. If any damage to the interior lining is suspected during pullback, the Contractor shall perform a CCTV inspection of the carrier pipe at no additional cost to the City. The Contractor is responsible for the repair of any damage to the interior lining at no additional cost to the City.

(11)During pullback operations of the water main carrier pipe, the Contractor shall engage the services of the manufacturer to be present on-site during the entire pullback period to ensure quality assurance and quality control of the pipe during pullback operations.

(12)The Contractor shall monitor and inspect pipe rollers and method for suspending pipe at entry during the pullback operation to avoid damage to the pipe.

(13)The Contractor shall cease operations if the pipe is damaged and shall remove the pipe from the bore and repair the pipe using the a DDC QA & Construction Safety Bureau (QACS) approved manufacturer's recommended procedure or replace the damaged pipe before resuming installation.

(14)Damage to the pipe resulting from installation or grouting of the annular space is the responsibility of the Contractor, including costs for replacement and labor and materials.

(15)After the pipe is completely pulled through the bore, a sufficient period as recommended by the pipe manufacturer shall be provided before the final pipe tie-in.

(16)Cleaning of the carrier pipe shall be done in accordance with **Subsection 60.32.8(B)**.

(17)After the water main carrier pipe has been inserted into the steel sleeve and prior to grouting between the steel sleeve and the carrier pipe, the Contractor shall perform a combined pressure and leakage tests on the carrier pipe in accordance with **Subsection 60.32.9(B)**.

(18)After the water main carrier pipe is satisfactorily installed and passes inspection and testing, the entire annular space between the inside of the steel sleeve pipe and the outside of the water main carrier pipe shall be filled with grout in accordance with **Subsection 60.32.10(B)**.

(19)After the grouting between the steel sleeve and the carrier pipe is complete, the Contractor shall perform a second combined pressure and field test in accordance with **Subsection 60.32.9(C)**.

(20)After the water main carrier pipe has been installed, complete, but prior to being put into service, the water main carrier pipe shall be thoroughly disinfected in accordance with **Subsection 60.32.8(C)**.

(H) SITE RESTORATION AND DEMOBILIZATION

The Contractor shall remove all equipment, materials, drilling fluids, muck, waste, and debris from the site and restore the site to its original condition upon completion of the installation. Restoration and demobilization shall be accomplished as shown, specified or ordered by the Engineer. Such restoration and demobilization work shall be completed by the Contractor within the Final Contract Duration specified in Schedule "A" or within one (1) month of the completion of the pipeline installation whichever comes first.

(I) SAFETY

The Contractor shall carry out the Contractor's operations in strict accordance with OSHA, NYC and the Manufacturer's safety requirements.

The Contractor shall provide adequate ventilation in confined spaces at all times. Air quality in the horizontal directional drilled pipe shall be tested prior to personnel entry and periodically thereafter as required by law.

The Contractor shall provide adequate lighting in pipe being inspected and around equipment being utilized. Power and lighting circuits shall be separated and thoroughly insulated.

(J) GEOTECHNICAL INSTRUMENTATION

The Contractor shall install and monitor geotechnical instrumentation at the locations and in accordance with the requirements shown, specified, ordered or approved.

60.32.6 QUALIFICATIONS

The horizontal directional drilling Contractor or subcontractor performing the work required under this contract must have successfully self-performed at least five (5) horizontal directional drilling projects to install product pipe of a similar nominal diameter and length to the proposed project within the past two years. The Engineer shall have sole authority to determine the adequacy of representative projects.

One of the successfully completed projects shall have been in similar ground conditions (strata type and hydrostatic head), as to those anticipated on this contract.

The Contractor shall submit a description of such projects, which shall include at a minimum, a listing of the locations, dates of projects, owners, pipe types and sizes, type of equipment utilized, ground conditions, boring lengths, maximum line and grade deviations and other information relevant to the issue of the successful completion of such projects.

The Contractor's project manager, superintendent, drill operator, and guidance system operator assigned to horizontal directional drilling shall be experienced in work of this nature and shall have successfully completed similar projects using horizontal directional drilling. The Contractor shall submit substantiating evidence of qualifications in accordance with the provisions of this Section. If the Contractor elects to employ a specialist subcontractor(s) to perform horizontal directional drilling, the Contractor shall obtain and submit qualification documents for the subcontractor(s). Subcontractor(s) shall be held to the same requirements as those for the Contractor described herein.

All drilling, drill guidance, and pipe joining equipment operators shall be experienced in comparable horizontal directional drilling work, and shall have been fully trained in the use of the proposed equipment by an authorized representative of the equipment manufacturer(s) or their authorized training agents.

Prior to the award of the contract, the Contractor will be required to submit the name and resume of the horizontal directional drilling subcontractor for approval.

60.32.7 SPECIFIC REQUIREMENTS

(A) The Contractor shall provide all equipment, materials, and personnel necessary for completing the installation as shown on the contract drawings and specified herein. The equipment and materials shall include but are not limited to:

(1) Directional drilling rig with all ancillary equipment, including drill pipe, drilling fluid, cutting tools, reaming bits, swivels, expanders, motors, pumps, hoses, mixing equipment, drilling fluid processing equipment (cuttings separation equipment), downhole survey equipment, energized surface grid tracking system, fluid pressure and flow rate monitoring equipment, spare parts, pipe handling equipment (cranes, backhoes, rollers, side boom tractors) control equipment, and office equipment.

(2) Drilling fluids, water, fuel, lubricant, polymers, or other additives.

(3) Any other expendable or reusable materials, supplies, and equipment needed for the installation.

(B) The drilling system shall include a fluid pump and separation plant that can achieve the rates of drilling fluid pumping, spoil separation, and slurry cleaning required by the Contractor to achieve installation through the strata anticipated by the geotechnical data. Shaker screens and hydrocyclones may be required for efficient separation of spoils. The Contractor is advised that the separation plant must fit within the allowable work areas shown on the contract drawings unless otherwise permitted in writing by the Engineer.

(C) All spoil and slurry must be contained in trucks, tanks, approved recirculation pits, or other containers at all times. Dumping of spoil or slurry on the ground, discharge into sewers, or discharge into the water bodies will not be permitted. All spoils will be transported and disposed of off-site at an approved disposal facility that meets all State of New York and local requirements.

(D) Perform all work within work areas shown on the contract drawings, unless otherwise permitted, in writing, by the Engineer.

(E) The pipeline permitted shall be installed using the radii of curvatures and entry and exit angles shown on the contract drawings, unless deviations are approved in writing by the Engineer.

(F) Pipe rollers and lifters will be required to help the transition of the steel sleeve pipe and carrier pipe into the bore and to minimize the pull force. The number of pipe rollers and lifters shall be determined by the Contractor in accordance with the pipe supplier's recommendations. Location and spacing of the rollers and lifters will be done in accordance with the pipe manufacturer's recommendations based on bend radius.

(G) The carrier pipe will be pressure-tested by the Contractor after initial pullback is completed and prior to grouting. It will also be pressure-tested by the Contractor after grouting of the annular space between the steel sleeve pipe and the carrier pipe.

(H) The Contractor shall allow access to the Engineer and shall furnish necessary assistance and cooperation to aid in observations and data and sample collection, including, but not limited to the following:

(1) The Engineer shall have full access to the operator control container prior to, during, and following all horizontal directional drilling operations. This shall include, but not be limited to, providing visual access to real-time operator control screens, gauges, and indicators.

(2) The Engineer shall have full access to the slurry separation plant prior to, during, and following all horizontal direction drilling operations. This shall include, but not be limited to, full access to shaker screens, hydrocyclones, conveyor belts, and slurry and spoil holding tanks. The Engineer shall be allowed to collect soil samples from the shaker screens and/or spoil holding tanks on the slurry separation plant a minimum of once per installed pipe section, and whenever changes in conditions are observed or suspected. If requested, the Contractor shall assist in the collection of these samples as directed by the Engineer.

(I) The drilling fluid pressures shall be measured and recorded throughout the pilot hole drilling. These records shall be maintained and provided daily to the Engineer. The position of the drill head shall be continuously tracked and recorded by a downhole wire line tracking locator system,. A plot of actual locations of the bore path shall be maintained and updated daily, or more frequently, as directed by the Engineer. An approved method shall be used for on/off site monitoring. These records shall be maintained and provided daily to the Engineer.

(J) Contractor shall comply with all local noise ordinances. Sound levels in excess of these values are sufficient cause to have the work halted until equipment can be quieted to these levels. Work stoppage for excessive noise shall not relieve the Contractor responsibility to substantially complete the contract within time specified nor shall the Contractor make any claim as to loss of profits.

60.32.8 CLEANING AND DISINFECTING PIPE

(A) CLEANING STEEL SLEEVE PIPE

Cleaning of the steel sleeve pipe will be required if the pull cap is jeopardized during pullback at the discretion of the Engineer. If cleaning is required, swab inside of pipe with a flexible polyurethane foam swab complete with rear polyurethane drive seal.

(a) In tandem, swab with a 1 - 2-pounds per cubic foot pig for proving, sweeping and sealing and a 5 - 7-pounds per cubic foot pig for wiping.

(b) The tandem swabs shall make a minimum of two (2) passes through the entire pipeline.

(c) Cleaning and flushing shall be accomplished by propelling the swab down the pipeline to the exit point with potable water. Flushing shall continue until the water is completely clear.

(d) The sleeve shall be clean and entirely free from projections that might interfere with the insertion of the carrier pipe through it.

(B) CLEANING CARRIER PIPE

After the installation of the carrier pipe, swab inside of pipe with a flexible polyurethane foam swab complete with rear polyurethane drive seal.

(a) In tandem, swab with a 1 - 2-pounds per cubic foot pig for proving, sweeping and sealing and a 5 - 7-pounds per cubic foot pig for wiping.

(b) The tandem swabs shall make a minimum of two (2) passes through the entire pipeline.

(c) Cleaning and flushing shall be accomplished by propelling the swab down the pipeline to the exit point with potable water. Flushing shall continue until the water is completely clear of any foreign materials or discoloration.

(C) DISINFECTING CARRIER PIPE

After the water main carrier pipe has been installed, complete, but prior to being put into service, the water main carrier pipe shall be thoroughly disinfected in accordance with the requirements of the specifications.

(D) The Contractor shall furnish all clean potable water, and pumping and other equipment necessary for the cleaning and disinfecting operations.

60.32.9 INSPECTION AND TESTING

(A) Immediately after the completion of the cleaning operations, the Engineer will conduct an inspection of the steel sleeve for any defect or leakage so those repairs, if necessary, can be made. No carrier pipe shall be installed until authorized by the Engineer.

The Contractor shall provide the Engineer, without charge, all facilities and assistance necessary to perform this inspection of the steel sleeve, and for obtaining any information the Engineer requires in order to access the progress and manner of the work performed.

The entire installation procedure shall be rigorously inspected as herein specified, but inspection shall not relieve the Contractor of responsibility to furnish material and perform work in accordance with the specifications. If at any time it is found that the pipe insertion procedure is not in accordance with these specifications, the pipe so installed will be subject to rejection.

(B) After the water main carrier pipe has been inserted into the steel sleeve and prior to grouting between the steel sleeve and the carrier pipe, the Contractor shall perform the following field tests:

(i) For Ductile Iron Water Main Carrier Pipe - Combined pressure and leakage test in accordance with the requirements of these specifications, and as directed by the Engineer.

If a section fails to pass the tests specified above, the Contractor shall locate, uncover and repair or replace the defective pipe, pipe fitting, or joint to the satisfaction of the Engineer, all at the Contractor's own expense.

(C) After the grouting between the steel sleeve and the carrier pipe is complete, the Contractor shall perform a second field test in accordance with **Subsection 60.32.9(B) paragraphs (i).**

If a section fails to pass the tests specified above, the Contractor shall locate, uncover and/or repair or replace the defective pipe, pipe fitting, or joint to the satisfaction of the Engineer, all at the Contractor's own expense.

(D) Advance Notices and Inspections: The Contractor shall provide at least seventy-two (72) hours advance written notice to the Engineer of the planned inspection of major drilling activities, including pilot bore launch, pre-reaming, reaming, steel casing pullback, carrier pipe pullback and the grouting of

the annular space between the casing pipe and the carrier pipe. The Contractor shall immediately notify the Engineer, in writing, when any significant problems are encountered or if ground conditions are considered by the Contractor to be materially and significantly different than those anticipated by the geotechnical data. All Work by the Contractors shall be performed in the presence of the Engineer, unless the Engineer grants prior written approval to perform such work in Engineer's absence.

(E) Surveying Equipment and Procedures: All surveying equipment used for downhole surveying and tracking of the bore path and drill head shall be inspected and calibrated by the equipment manufacturer prior to use. Proof of this inspection and calibration shall be provided to the Engineer prior to commencement of drilling operations.

60.32.10 GROUTING

GROUT FILL AROUND CARRIER PIPE

After the carrier pipe is satisfactorily installed and passes inspection and testing, the entire annular space between the inside of the steel sleeve pipe and the outside of the water main carrier pipe shall be filled with Low Weight Cement Grout using the procedures specified below.

(1) The grouting shall be performed from both the City Island and Bronx sides with a minimum of three (3) passes at different elevations from each side. The annular space between the steel sleeve pipe and water main carrier pipe shall be free of water prior to grouting. The carrier pipe shall be filled with water and pressurized during the entire grouting process. The annular space between the steel sleeve pipe and the water main carrier pipe shall be completely filled with grout.

(2) The Contractor shall provide a 12-inch thick concrete plug or other butthead approved by the Engineer at each end that will secure the carrier pipe to the steel sleeve.

Unless otherwise shown on the contract drawings, the Contractor shall submit along with the required submittal in **Subsection 60.32.3** the design of these concrete plugs. The design of these concrete plugs shall incorporate a method for securing the concrete plugs to the ends of the steel sleeve and carrier pipe so as to be capable of withstanding the grouting pressures without slippage or blow-out at the ends. The concrete plugs design shall include grout supply port(s) and air relief port(s) located at the highest (top) point of the plug.

(3) The volume of the grout being placed shall be monitored and recorded. A comparison between the theoretical volume and the actual volume of grout placed shall be done and any discrepancies shall be brought to the attention of the Engineer.

(4) The grout fill shall be placed by pneumatic or pumping equipment under a pressure to ensure that the entire void space has been evenly and completely filled. The pressure must be continuously monitored and care must be taken to avoid pressures which will damage the pipe and/or joints. Equipment and methods of placement of the grout fill will be subject to review by the Engineer.

(5) Grouting procedures shall be performed in a manner so as to prevent damaging the carrier pipe and it's jointing, nor capable of damaging or misaligning the brace and support spacers installed to align and insulate the carrier pipe.

60.32.11 MEASUREMENT

Payment for water main in horizontal directional drilled steel sleeve shall be a lump sum payment for each size, kind, class and wall thickness of water main carrier pipe together with horizontal directional drilled steel sleeve incorporated in the work, complete, as shown, specified or required, regardless of the lengths installed.

60.32.12 PRICE TO COVER

The contract price for "WATER MAINS IN HORIZONTAL DIRECTIONAL DRILLED STEEL SLEEVES" shall be a lump sum price bid for each size, kind, class and wall thickness of water main carrier pipe together with horizontal directional drilled steel sleeve and shall cover the cost of all labor, materials, plant, equipment, samples, tests and insurance required and necessary to construct the water mains in horizontal directional drilled steel sleeves to the sizes and to the lines and grades shown, including the earth excavation of all materials of whatever nature encountered (See **Section 40.03 - Earth**

Excavation); additional subsurface investigations; geotechnical instrumentation; surveying; all sheeting and bracing; piping; pumping; bridging; welding/fusing/connections; backfilling; entry and exit site area preparation and mobilization; watertight sheeting and cofferdams; fill material; tracking systems; drilling fluids; spoils separation (solids control plant, mud plants, shaker screens, hydrocyclones, slurry and spoil holding tanks, generators, drilling fluid containment and recirculation equipment, etc.); noise reduction/abatement measures; steel containment casing pipe; pipe support equipment (pipe rollers, etc.); lighting; spacers and braces; fuel, lubricants and additives; maintenance and restoration work (including groundwater control, etc.); safety measures (barriers, barricades, 6-foot fencing, gates, signs, etc.); installation of steel sleeves; pressure grouting for soil stabilization; cleaning of carrier pipe and steel sleeves; installation of water main carrier pipe in steel sleeves; inspection and testing; grouting required to fill the voids between the inside of steel sleeves and the outside of water main carrier pipe; disinfection of water main pipe; temporary accessways placement (broken stone, geotextile fabric, etc.); temporary accessway maintenance and removal; entry and exit site area restoration and demobilization; preparation, submittal and approval of all required shop drawings and designs; obtaining of all necessary permits; and furnishing and installing all other items necessary to complete this work and do all work incidental thereto, all in accordance with the contract drawings, specifications and standards and as directed by the Engineer.

In addition, included in the price hereunder shall be the cost of all labor and materials necessary to remove all specified and ordered structures and appurtenances that may be in the entry and exit site areas and in the line of the work and to do all the work incidental thereto, all in accordance with **Subsections 10.13 and 10.28** of the specifications and as directed by the Engineer.

60.32.13 SEPARATE PAYMENT

The Contractor is notified that payment for tree removal; stump removal; cleaning and grubbing; tree replacement; re-vegetation; erosion control (turbidity curtains, silt fence, straw bales, etc.); maintenance of site, will be made under the unit price bid for the respective bid items.

Payment for Water Mains In Horizontal Directional Drilled Steel Sleeves will be made under the Item Number as calculated below:

The Item Numbers for Water Mains In Horizontal Directional Drilled Steel Sleeves have eleven characters. (The decimal point is considered a character, the third character.)

(1) The first five characters shall define Water Mains In Horizontal Directional Drilled Steel Sleeves:

60.32

(2) The sixth character shall define the Kind of Water Main Carrier Pipe:

D - Ductile Iron Restrained Joint Pipe
S - Steel Pipe (Double Lap Fillet Welded)

(3) The seventh and eighth characters shall define the Diameter of Water Main Carrier Pipe. (The seventh and eighth characters representing the unit of inches for the Diameter of the Water Main Carrier Pipe.) See examples below:

08 - 8-Inch
20 - 20-Inch
48 - 48-Inch

(4) The ninth character shall define the Class of Ductile Iron Water Main Carrier Pipe or the Wall Thickness of Steel Water Main Carrier Pipe (Wall thickness in 1/8-inch increments):

3 - 3/8-Inch Wall Thickness
4 - 4/8-Inch or 1/2-Inch Wall Thickness
5 - Class 55 or 5/8-Inch Wall Thickness
6 - Class 56 or 6/8-Inch or 3/4-Inch Wall Thickness

(5) The tenth and eleventh characters shall define the Diameter of the Horizontal Directional Drilled Steel Sleeve Pipe. (The tenth and eleventh characters representing the unit of inches for the Diameter of the Horizontal Directional Drilled Steel Sleeve Pipe.) See examples below:

30 - 30-Inch
66 - 66-Inch

(6) Examples of Item Numbers together with Description and Pay Unit as provided in the Bid Schedule are provided below:

Item No.	Description	Pay Unit
60.32D20532	20-INCH DUCTILE IRON PIPE CLASS 55 WATER MAIN IN HORIZONTAL DIRECTIONAL DRILLED 32-INCH STEEL SLEEVE	L.S.
60.32D48572	48-INCH DUCTILE IRON PIPE CLASS 55 WATER MAIN IN HORIZONTAL DIRECTIONAL DRILLED 72-INCH STEEL SLEEVE	L.S.
60.32D12630	12-INCH DUCTILE IRON PIPE CLASS 56 WATER MAIN IN HORIZONTAL DIRECTIONAL DRILLED 30-INCH STEEL SLEEVE	L.S.
60.32S48472	48-INCH STEEL PIPE (1/2-INCH WALL THICKNESS) WATER MAIN IN HORIZONTAL DIRECTIONAL DRILLED 60-INCH STEEL SLEEVE	L.S.

(5) **Refer** to **Subsection 71.41.4 - Specific Pavement Restoration Provisions**, Page VII-67:

Add the following to **Subsection 71.41.4**:

(E) Specific Pavement Restoration Provisions:

(1) In City Island Avenue, adjacent to the construction area exit site as shown on contract drawing sheet 10, inside area labeled "Limits of 2" Overlay", the restoration shall be as follows:

(a) The permanent restoration over the **trench width and cutbacks only** shall consist of a top course of one and one-half (1-1/2) inches of binder mixture on a base course of a minimum of four and one-half (4-1/2) inches of binder mixture, or a top course of a minimum of three (3) inches of binder mixture on a base course of a minimum of six (6) inches of high-early strength concrete, to match the existing pavement as directed by the Engineer.

(b) Finally an overlay of two (2) inches of asphaltic concrete wearing course shall be installed over the entire width of the roadway from **curb to curb** or **edge to edge** of existing roadway.

(2) If the water main work is to be extended outside the project limits, the restoration shall be as follows:

The permanent restoration over the trench width and cutbacks only shall consist of a top course of one and one-half (1-1/2) inches of asphaltic concrete wearing course on a base course of a minimum of four and one-half (4-1/2) inches of binder mixture, or a top course of one and one-half (1-1/2) inches of asphaltic concrete wearing course on a minimum of one and one-half (1-1/2) inches of binder mixture on a base course of a minimum of six (6) inches of high-early strength concrete, to match the existing pavement as directed by the Engineer.

(2) The following requirements apply:

(a) Before the top course is installed, an additional width of asphalt beyond the edge of new base course shall be saw-cut and removed from all edges of trenches to a depth to accommodate the specified top course and the entire area restored. This additional removal shall be in accordance with paragraph (b) below.

(b) Pavement excavation along with saw cutting of pavements for sewer and water main trenches shall be in accordance with **Section 71.21 - Pavement Excavation** of the Standard Sewer And Water Main Specifications.

(c) At locations requiring the installation of a concrete base course, a reflective cracking membrane shall be installed over joints prior to restoration, the cost of which shall be deemed included in the prices bid for all pavement restoration items. Additionally, appropriate pavement keys as described below shall be used.

(d) Pavement keys **Type B-1** shall be used to insure a desired four (4) inch curb reveal (two and one-half (2-1/2) inch absolute minimum). Pavement key **Type A** shall be used in all intersections. Both keys are to be per Bureau of Highways Operations Specifications and Standard Details of Construction.

(e) Unless otherwise specified, the cost for Proctor analyses, in-place soil density tests, tack coating, eradication of temporary roadway markings, stripping or milling of pavement keys and adjustment of city-owned castings for all roadway work shall be deemed included in the prices bid for all pavement restoration items.

(f) Payment for placement of temporary pavement marking shall be made under Item No. 6.49 - TEMPORARY PAVEMENT MARKINGS (4" WIDE).

(g) Payment for removal of existing pavement markings shall be made under Item No. 6.53 - REMOVE EXISTING LANE MARKINGS (4"WIDE).

(h) Payment for placement of permanent pavement marking with thermoplastic reflectorized pavement markings (crosswalk and lane dividers) shall be made under Item No. 6.44 - THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS (4" WIDE).

(i) Payment for pavement restoration shall be made under the following items:

Item No.	Item	Payment Description
4.02 AF-R	Asphaltic Concrete Wearing Course, 2" Thick	(For 2" asphaltic concrete wearing course overlay from curb to curb or edge to edge.)
4.02 CA	Binder Mixture	(For binder mixture base course over trenches and cutbacks; binder mixture top filler course under asphaltic concrete wearing course when no overlay is required; binder mixture top course when overlay is required; binder mixture in Type A and B Keys; and binder mixture to fill in roadway depressions and to provide a leveling course prior to overlay where ordered.)
4.04 H	Concrete Base For Pavement, Variable Thickness For Trench Restoration (High-Early Strength)	(For concrete base course over trenches and cutbacks.)

C. AMENDMENTS TO THE SPECIFICATIONS FOR TRUNK MAIN WORK

1) **Refer** to **Part 1 – Furnishing And Delivering Steel Pipes And Appurtenances 30 Inches In Diameter And Larger, Section 11. Fabrication:**, Page 4;

   Add the following to **Section 11:**

   All steel water mains shall be spiral welded pipes, and all steel water main fittings shall be fabricated from qualified spiral welded pipe. Can type pipe is not acceptable.

2) **Refer** to **Part 1 – Furnishing And Delivering Steel Pipes And Appurtenances 30 Inches In Diameter And Larger, Section 13. Special Fittings:**, Page 5;

   Add the following to **Section 13:**

   The steel reducer shall have a length of seven (7) feet for every twelve (12) inches reduction in diameter.

NEW YORK CITY Department of Transportation

JANETTE SADIK-KHAN, Commissioner

OCMC TRAFFIC STIPULATIONS

October 22, 2013

OCMC FILE NO: BXEC 13- 390
CONTRACT NO:
PROJECT: HED-564- NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

LOCATION(S): City Island Avenue between City Island Bridge and Cross Street - BRONX

PERMISSION IS HEREBY GRANTED TO THE NEW YORK CITY DEPARTMENT OF DESIGN AND CONSTRUCTION DIVISION OF INFRASTRUCTURE BUREAU OF DESIGN AND ITS DULY AUTHORIZED AGENT, TO ENTER UPON AND RESTRICT THE FLOW OF TRAFFIC AT THE ABOVE LOCATION AND ITS LOCAL ADJACENT STREETS FOR THE PURPOSE OF CARRYING OUT THE ABOVE NOTED PROJECT, SUBJECT TO THE STIPULATIONS, AS NOTED BELOW:

A. SPECIAL STIPULATIONS

1. **EMBARGOES** – A CONSTRUCTION EMBARGO WILL APPLY TO THOSE LOCATIONS BELOW WHICH FALL WITHIN THE **HOLIDAY EMBARGO, SUMMER EMBARGO** OR ANY OTHER SPECIAL EVENT EMBARGOES SUCH AS THE BUREAU OF PERMIT MANAGEMENT AND CONSTRUCTION CONTROL.
2. **BIKE LANES** – IF WORK IS IN OR AFFECTING A BIKE LANE, THE CONTRACTOR MUST POST ADVANCE WARNING SIGNS 350 FEET AND 200 FEET PRIOR TO THE WORK ZONE STATING **"CONSTRUCTION IN BIKE LANE AHEAD PROCEED WITH CAUTION"**, AND ALSO POST A SIGN AT THE WORK ZONE STATING **"CONSTRUCTION IN BIKE LANE PROCEED WITH CAUTION"**. SUCH SIGNS SHALL BE ORANGE, 3' X 3', DIAMOND-SHAPED WITH 4" BLACK LETTERING. SIGNS SHALL BE POSTED IN ACCORDANCE WITH THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
3. **BUS STOPS** – THE CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO NYC DOT OCMC AND NEW YORK CITY TRANSIT (NYCT) A MINIMUM OF FIVE (5) WEEKS IN ADVANCE FOR LANE/STREET CLOSURES THAT AFFECT BUS ROUTES/BUS STOPS.
4. **METERS** – THE CONTRACTOR MAY NOT REMOVE OR RELOCATE PARKING METERS WITHOUT FIRST OBTAINING APPROVAL FROM NYCDOT PARKING METER DIVISION AT 718 – 894 – 8651.
5. **ACCESS TO ABUTTING PROPERTIES** – THE CONTRACTOR SHALL COORDINATE ALL ACTIVITIES WITH ABUTTING PROPERTY OWNERS TO ENSURE ACCESS IS PROVIDED TO/FROM ENTRANCES/DRIVEWAYS AT ALL TIMES.
6. **AUTHORIZED PARKING** – PRIOR TO PERFORMING WORK WHICH IMPACTS AUTHORIZED PARKING, THE CONTRACTOR SHALL SUBMIT IN WRITING, AND COPY OCMC-STREETS, A REQUEST TO OCCUPY SPACE CURRENTLY USED BY AUTHORIZED VEHICLES. APPROVAL MUST BE RECEIVED FROM AUTHORIZED PARKING PRIOR TO OCCUPYING THESE AREAS.
7. **NOTIFICATION** – THE CONTRACTOR MUST AT LEAST TWO (2) WORKING DAYS BEFORE THE START OF CONSTRUCTION NOTIFY THE NYC FIRE DEPARTMENT, NYC POLICE DEPARTMENT, NYCEMS, LOCAL COMMUNITY BOARD, BOROUGH PRESIDENT'S OFFICE-CHIEF ENGINEER, NYCDOT OCMC OFFICE, AND ALL ABUTTING PROPERTY OWNERS.
8. **ENHANCED MITIGATIONS**
   - VARIABLE MESSAGE SIGNS (VMS) SHALL BE PROVIDED FOR THIS PROJECT. THE LOCATIONS AND MESSAGES SHALL BE RECOMMENDED BY NYCDDC AND THEIR CONTRACTOR A MINIMUM OF TWO (2) WEEKS PRIOR TO WORK COMMENCING, FOR OCMC REVIEW AND APPROVAL.
   - "NO STANDING ANYTIME-TEMPORARY CONSTRUCTION" SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE INSTALLED AND MAINTAINED AS WARRANTED BY THE MAINTENANCE AND PROTECTION OF TRAFFIC (MPT) REQUIRED TO FACILITATE TRAFFIC MOVEMENTS THROUGH THE WORK ZONE. ALL TEMPORARY SIGNS AND PAVEMENT MARKINGS SHALL BE REMOVED UPON COMPLETION OF THE PROJECT. THE CONTRACTOR OR AGENCY PROVIDING PUBLIC OUTREACH SHALL POST AND MAINTAIN ADVISORY SIGNS A MINIMUM OF 48-HOURS PRIOR TO CHANGING EXISTING PARKING REGULATION SIGNS TO APPROVED TEMPORARY CONSTRUCTION PARKING REGULATION SIGNS. THE ADVISORY SIGNS SHOULD BE POSTED ON ALL POLES AND DRIVE RAILS ON THE SEGMENT AFFECTED INDICATING THE DATE OF THE CHANGE, THE NEW REGULATIONS AND A TELEPHONE NUMBER TO OBTAIN INFORMATION.
   - COMMUNITY OUTREACH SHALL BE PROVIDED FOR THE DURATION OF THE PROJECT.
9. NYC DOT BRIDGES – REPLACEMENT OF THE CITY ISLAND ROAD BRIDGE PROJECT CONTRACT NO: HBX1164. THE NYC DDC CONTRACTOR MUST COORDINATE WITH NYC DOT BRIDGES PRIOR TO START WORK TO ENSURE THAT IT DOES NOT INTERFERE WITH BRIDGE PROJECT. ANY WORK ON THE BRIDGE APPROACHES, OR AT THE BRIDGE NEED TO REVIEWED BY NYC DOT BRIDGES AND APPROVAL RECEIVED.

B. MAINTENANCE AND PROTECTION OF TRAFFIC OF NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND.

1. CITY ISLAND AVENUE BETWEEN CITY ISLAND BRIDGE AND CROSS STREET.
   - Work hours shall be as follows: 7:00 am to 6:00 pm, Monday to Friday.

NYC Department of Transportation
Bureau of Permit Management and Construction Control
55 Water Street - 7th Floor, New York, NY 10041
T: 212.839.9621 F: 212.839.8970
www.nyc.gov/dot

- 8:00 am to 5:00 pm, Saturday
- Contractor shall maintain a minimum 5 foot clear sidewalk.
- Contractor shall maintain 2 lanes for traffic, 1-11 FT. lane in each direction at all time.
- Contractors may occupy 8 x 150 ft. of space adjacent to east curb for storage of material & Equipment.

2. **CITY ISLAND ROAD BETWEEN CITY ISLAND CIRCLE TO CITY ISLAND BRIDGE**

- Work hours shall be as follows: 7:00 am to 6:00 pm, Monday to Friday.
- 8:00 am to 5:00 pm, Saturday
- Contractor shall maintain a minimum 5 foot clear sidewalk.
- Contractor shall maintain 2 lanes for traffic, 1-11 FT. lane in each direction at all time.

Special Notes:

- Contractor must coordinate with NYCT Buses prior to start work.

C. GENERAL NOTES

1. **THIS IS NOT A PERMIT.** THIS STIPULATION SHEET MUST BE SUBMITTED WITH ALL REQUESTS FOR PERMITS PERTAINING TO THE ABOVE CONTRACT AND PRESENT AT THE WORK SITE ALONG WITH ALL ACTIVE CONSTRUCTION PERMITS WHEN THE APPROVED WORK IS BEING PERFORMED.
2. ALL RELOCATION WORK BY THE UTILITIES SUCH AS; CON EDISON, TELEPHONE, GAS AND CABLE COMPANIES SHALL PRECEDE THE CONTRACTORS' START OF WORK ON ALL AFFECTED ROADWAYS IN THE IMPACTED CONTRACT AREA.
3. THE CONTRACTOR IS ADVISED THAT OTHER CONTRACTORS MAY BE WORKING IN THE GENERAL AREA DURING THE TERM OF THIS STIPULATION. IN WHICH EVENT, THE CONTRACTOR MAY REQUIRE MODIFICATIONS BY THE OCMC-STREETS.
4. THE PERMITTEE IS NOT AUTHORIZED TO ENTER, OCCUPY OR USE ANY PUBLICLY-OWNED OR PRIVATELY OWNED, NON-PAVED, LANDSCAPE OR NON-LANDSCAPED LOCATION WITHOUT SPECIFIC WRITTEN PERMISSION. WHEN THE LOCATION IS WITHIN THE RIGHT-OF-WAY OF A LIMITED-ACCESS ARTERIAL HIGHWAY, WRITTEN APPROVAL FROM THE NYCDOT OCMC-HIGHWAYS IS REQUIRED. WHEN THE LOCATION IS WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR PUBLIC PARK, WRITTEN APPROVAL FROM THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION OR NEW YORK CITY DEPARTMENT OF PARKS AND RECREATION IS REQUIRED. WHEN THE LOCATION IS WITHIN THE RIGHT-OF-WAY OF ANY OTHER JURISDICTION SUCH AS PRIVATE PROPERTY, STATE, FEDERAL ETC., IT IS THE PERMITTEE'S RESPONSIBILITY TO DETERMINE THE PROPERTY OWNER AND OBTAIN THE WRITTEN APPROVAL.
5. THE PERMITTEE SHALL ADHERE TO THE NYCDOT BUREAU OF BRIDGES' SPECIAL PROVISIONS FOR LANDSCAPE PROTECTION, MAINTENANCE AND RESTORATION, ITEMS 1.18.15 THROUGH 1.18.19, WHENEVER AND WHEREVER ANY OF THE PERMITTEE'S ACTIVITIES OCCUR WITHIN A LIMITED ACCESS ARTERIAL HIGHWAY RIGHT - OF - WAY.
6. NO DEVIATION OR DEPARTURE FROM THESE STIPULATIONS WILL BE PERMITTED WITHOUT THE PRIOR WRITTEN APPROVAL FROM THE OCMC-STREETS. REQUEST FOR SUCH MODIFICATIONS SHALL BE SUBMITTED TO THE OFFICE OF THE OCMC-STREETS, NEW YORK CITY DEPARTMENT OF TRANSPORTATION, A MINIMUM OF TWENTY (20) DAYS IN ADVANCE FOR CONSIDERATION.
7. FOR THIS PROJECT THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN ALL NECESSARY ADVANCE WARNING AND DETOUR SIGNS, TEMPORARY CONTROL DEVICES, BARRICADES, LIGHTS AND FLASHING ARROW BOARDS IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," THE TYPICAL SCHEMES INCLUDED IN THIS SPECIFICATION; AND AS ORDERED BY THE ENGINEER-IN-CHARGE AND THE OCMC-STREETS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING HIS CONSTRUCTION SIGNAGE. THE IDENTIFICATION SHALL INCLUDE THE CONTRACTOR'S NAME, SPONSORING AGENCY NAME AND THE CONTRACT NUMBER. THE IDENTIFICATION SHALL BE PLACED ON THE BACK OF THE SIGN. THE LETTERING SHALL BE THREE (3) INCHES HIGH.
9. THE OCMC-STREETS RESERVES THE RIGHT TO VOID OR MODIFY THESE STIPULATIONS SHOULD CONSTRUCTION FAIL TO COMMENCE WITHIN TWO (2) YEARS OF THE SIGNED DATE OF THESE STIPULATIONS.
10. THE CONTRACTOR MUST COMPLY WITH ALL CONSTRUCTION EMBARGOS ISSUED BY THE NYCDOT INCLUDING THE HOLIDAY EMBARGO.

JOSEPH P. NOTO
EXECUTIVE DIRECTOR
OCMC-STREETS

MILAGROS RIVERA
PROJECT MANAGER
OCMC-STREETS
JPN/mr

THE CITY OF NEW YORK Department of Sanitation

S. ELIZABETH SEARLE
Assistant Commissioner
for Legal Affairs

Bureau of Legal Affairs
44 Beaver Street
New York, NY 10004
Telephone (212) 837-8110
FAX (212) 837-8243

Department of Sanitation Rules and Regulations Governing Non-Putrescible Solid Waste Transfer Stations

INTERPRETIVE MEMORANDUM # 2
February 14, 1995

Subject: Temporary Storage and Processing of Construction and Demolition Debris by New York City Agency Contractors

Contractors performing construction work for New York City agencies may be required to excavate dirt, concrete, rock, gravel and similar materials ("construction materials") from a contract site or to remove from a contract site construction materials resulting from construction, demolition, alteration, repair or renovation of structures, streets or buildings. On street construction projects, construction materials required to be excavated or removed may also include asphalt. The purpose of this Interpretive Memorandum is to (a) define the circumstances under which the Department of Sanitation (the "Department") will not deem its Rules and Regulations Governing Non-Putrescible Solid Waste Transfer Stations (the "Rules") to apply to the temporary storage, processing and/or stockpiling (collectively, "stockpiling") of such construction materials and (b) the procedure for ensuring such exemption. It is the responsibility of the contracting agency to oversee its contractors' compliance with the Rules and with this Interpretive Memorandum.

1. When No Transfer Station Permit is Required

Where a City contractor has:

(a) set aside an area of a contract site for stockpiling construction materials excavated from and/or intended for that site; or

(b) received written approval from the contracting agency for an off-site stockpiling location,

the Department will not deem such stockpiling location a transfer station and will not require the contractor to obtain a transfer station permit so long as:

(c) no construction materials or debris from off the contract site are received at the designated location for subsequent transfer to another location (other than the contract site); and

(d) the temporary stockpiling location is clearly described as such in the contract or clearly approved by the construction agency and designated as such in writing to the Department by the agency; and

(e) the construction agency represents in writing to the Department that such agency will monitor the temporary stockpiling location and ensure its clean-up and restoration pursuant to the procedures set out in this memorandum.



Help Reduce
New York's Waste.

printed on recycled paper

Example: Street Construction Projects

As part of a contract for street construction, the contractor may be working at one end of a street and using an area at the other end of the street for the temporary stockpiling of construction materials. Both ends of the street are part of the construction contract site. In addition, the contractor may have leased an off-site location for temporary stockpiling of materials, which, following processing, will be reincorporated into the contract site, with some portion of the remainder designated for delivery to a Department disposal facility. Neither location will be regulated by the Department as a transfer station so long as the procedures set out in this memorandum are followed.

2. Procedure for Exception.

Upon a City construction agency's approval of any location to be designated as a temporary processing, storage or stockpiling area, that agency must determine that (a) its contract with the contractor provides for clean-up and restoration of such area by, for example, the contractor's posting of a restoration bond and/or by contractual set-off and (b) the agency has adequate procedures for monitoring the designated area to ensure that it does not violate the provisions set forth in this memorandum and that such location is cleaned up and restored at the completion of the contract work.

The City construction agency must submit an official letter to the Department acknowledging compliance with both (a) and (b) immediately above and representing that the agency will ensure the contractor's compliance. *The letter to be submitted must be in substantially the following form, addressed to the Director, Bureau of Waste Disposal,* Department of Sanitation, 125 Worth Street, Room 726, New York, NY 10013:

"The New York City Department of _____ (the "Agency") has awarded a construction contract to _____ (Contractor) _____ (the "Contractor") for work to be performed at _____ (Contract Site) _____ .

a. This Agency has approved the following locations to be used by the Contractor for the temporary storage, processing and/or stockpiling of construction materials (the "Stockpiling Locations") excavated from the construction site or intended for the construction site:

_____

_____

_____

_____

b. The terms of the contract require the Contractor to clean up and restore the Stockpiling Locations, whether on or off the contract site, at or before the completion of the contract work.

c. This Agency assumes responsibility for the monitoring of Stockpiling Locations to ensure that only materials received from and/or intended for the construction site are stockpiled at such locations and we will enforce clean-up and restoration of such Locations at the end of their use for temporary stockpiling or at the termination of the contract, whichever occurs earlier, through restoration

bonding requirements and/or contractual set-off provisions such that the costs of clean-up and restoration will not become a charge to the Department or the City. "

3. When a Transfer Station Permit is Required

A transfer station permit will be required under any circumstances other than those outlined above. Except in the specifically defined circumstances set forth in this memorandum, any operator of a location or facility which receives, processes, stores or stockpiles construction and demolition debris or fill material for purposes of transfer to another location, including to a New York City Department of Sanitation facility, and whether or not under contract to the Department for the delivery of such materials, will be fully subject to the Department's transfer station rules and liable for enforcement for violations.

(END OF SECTION)
29 Pages + 375 Page Attachment at end of this Volume 3 of 3

EP7 - PAGES

GAS COST SHARING (EP-7) STANDARD SPECIFICATIONS

NOTICE

THE PAGES CONTAINED IN THIS SECTION (EP7-PAGES) REPRESENT THE GAS COST SHARING WORK THAT SHALL APPLY TO AND BECOME A PART OF THE CONTRACT.

(NO TEXT ON THIS PAGE)

TABLE OF CONTENT

I - NOTICE TO ALL BIDDERS; GAS COST SHARING WORK

II - GENERAL PROVISIONS; GAS COST SHARING WORK

1. General
2. Gas Interferences And Accommodations
   2a. Water Main Accommodations
   2b. Sewer Accommodations
3. Quantity Overruns, EP-7 Funded Bid Items
4. Changes And Extra Work
5. Excavation
6. Backfilling And Street Restoration
7. Non-Responsive Bids
8. Minimum Clearances
9. Work By Facility Operator
10. Materials Furnished By Facility Operator
11. Liability And Insurance
12. Width And Depth Of Excavation
13. Depth And Crossing Angles Of Gas Facilities
14. Maintenance Of Traffic For Gas Work
15. Relocated Gas And Temporary Systems Installation
16. Role Of Company Inspector
17. Coordination With Gas Company

III - TECHNICAL SECTION

SECTION 6.01 - Trench Crossings; Support And Protection Of Gas Facilities And Services.
SECTION 6.02 - Extra Excavation For The Installation Of Catch Basin Sewer Drain Pipes With Gas Interferences.
SECTION 6.02.1 - Extra Excavation For The Installation Of Catch Basin Sewer Drain Pipes With Upstream Inverts Greater Than Six (6) Feet.
SECTION 6.03 - Removal Of Abandoned Gas Facilities. All Sizes.
SECTION 6.03.1 - Removal Of Abandoned Gas Facilities With Possible Coal Tar Wrap. All Sizes. (For National Grid Work Only)
SECTION 6.03.1a - Removal Of Abandoned Gas Facilities With Possible Coal Tar Wrap. All Sizes. (For Con Edison Work Only)
SECTION 6.04 - Adjust Hardware To Grade Using Spacer Rings/Adaptors. (Street Repaving.)
SECTION 6.05 - Adjust Hardware To Grade By Resetting. (Road Reconstruction.)
SECTION 6.06 - Special Care Excavation And Backfilling.
SECTION 6.07 - Test Pits For Gas Facilities.
SECTION 6.09 - Trench Excavation and Backfill for New Gas Mains and Services (For National Grid Work Only)
SECTION 6.09a - Trench Excavation and Backfill for New Gas Mains and Services (For Con Edison Work Only)

IV - STANDARD SKETCHES; GAS COST SHARING WORK

NO. 1 - Support Requirements For Gas Mains And Services Crossing Excavation Greater Than 4'-0" Wide At Any Angle
NO. 1A - Support Requirements For Gas Mains Over 16" Diameter Up To And Including 48" Diameter Crossing Excavation At Any Angle
NO. 2 - Typical Methods Of Measurement For Gas Crossings
NO. 3 - Utility Crossings During Catch Basin Chute Connection Pipe Installation
NO. 4 - Utility Crossings During Catch Basin Chute Connection Pipe Installation (Extra Depth)
NO. 5 - Gas Main Encroachment On And/Or Parallel To Excavation Of Unsheeted Trench

V - PRELIMINARY GAS WORK TO BE PERFORMED BY FACILITY OPERATOR

VI - LISTING OF APPROXIMATE LOCATIONS OF EP-7 BID ITEMS QUANTITIES

I - NOTICE TO ALL BIDDERS; GAS COST SHARING WORK

All prospective bidders are hereby advised that, pursuant to the "Gas Facility Cost Allocation Act", ("the Act"), the City of New York has entered into an agreement ("the Agreement") with the gas companies (Con Edison or National Grid (formerly KeySpan Energy Delivery)) operating in their respective areas of the City to "share" the cost of facility relocation and/or support and protection of facilities disturbed by proposed water and/or sewer and related City work specified in this contract. Therefore, bid items, specifications and estimated quantities for the incremental costs of support and protection of certain gas facilities have been included in this contract. The low bid for this contract shall be determined by examining each bid for all work to be performed under this contract including any work of support and protection of gas facilities to be performed. The Contractor shall not seek additional compensation from gas companies except as specifically set forth in its contract.

II - GENERAL PROVISIONS; GAS COST SHARING WORK

1. General:

The Contractor shall perform City work with interferences from existing live and abandoned gas facilities. This shall be defined as utility work. Therefore, this contract includes bid items, specifications and estimated quantities designed to fully compensate him/her for the incremental costs of supporting, protecting, providing accommodations and, avoiding disturbing gas facilities located in the streets shown on the contract drawings. In the event that any other provisions of this contract related to gas facilities (or private utilities) conflict with these provisions, these provisions shall supersede and govern all work related to gas facilities owned by the companies operating in the project area. All utility work, as defined in these specifications, including changes and additions thereto shall be paid solely by the City except when specified otherwise in this contract. Contractor hereby agrees that the facility operator shall not be liable to pay him/her for any work performed including extra utility work. Contractor agrees that its bid prices include all compensation for loss of productivity and efficiency, idle time, delays (including any delays occasioned by negotiation of a contract change), change in operations, mobilization, demobilization, remobilization, added cost or expense, lost of profit, other damages or impact costs that may be suffered by or because of utility work, or the presence of gas facilities in the proximity of City work and that it will not seek additional compensation for these items. All disputes shall be resolved as specified in the contract.

Pursuant to the Act, Agreement, and the New York City Administrative Code, the gas company(ies) has been directed by the Commissioner and is required to perform all maintenance, repairs, replacement, shifting, alteration, relocation, and/or removal work that are not part of this contract. By having bid on this contract, the Contractor understands and agrees that the Commissioner has preasserted any right the City has to require, including the issuance of any directives or so called "order outs" under the New York City Administrative Code, any or all gas companies to maintain, repair, replace, protect, support, shift, alter, relocate, and/or remove all gas facilities that are about to be disturbed by the City contract work. The issuance of additional such directives during the performance of the contract work, where necessary in the sole judgment of the Commissioner, shall be initiated by such Commissioner as set forth in the relevant sections of the Act and Agreement. Contractor further agrees to insert such requirements as set forth herein above into any contracts with its approved subcontractors so that its subcontractors also understand and agree to such contract requirements.

2. Gas Interferences And Accommodations:

During the performance of sewer and water main work funded by the New York City Department of Environmental Protection (NYCDEP), as instructed by the Engineer, the use of any applicable contract bid item is allowed in order to resolve and accommodate all gas facilities interferences with such City work, including the removal of contaminated soil in associated trench excavation. This is in addition to the specified EP-7 bid items in the contract. Payment for such accommodation shall be funded by EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" (F.S. Fixed Sum). The value of such accommodation shall be computed by multiplying the appropriate unit prices bid to the quantity of work performed, as determined by the Engineer, and applying the total amount thus to be paid

to EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS". When EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" does not exist, such additional accommodation work shall be at no cost to the City but shall be a matter of adjustment between gas facility operator and Contractor. Private facilities, other than gas, that become in interference due to gas interferences accommodations shall also be accommodated, if so directed by the Resident Engineer, at no additional cost to the City and, provided that its owner agrees to be responsible for all additional costs to Contractor, otherwise, such facility shall be ordered by the City to be maintained, shifted, relocated or replaced by its owner at his/her expenses.

2a. Water Main Accommodations:

When water main construction is to be performed in this contract, Contractor shall be required, if warranted by field conditions, and at locations designated by the Resident or Borough Engineer, to change the vertical or horizontal alignment of water mains including but not limited to all additional labor, material, work method accommodations, furnishing, delivering and laying offset fittings and pipes, etc., necessary in order to complete water main installation and, avoid gas interferences in the project area, including street intersections. Typical work method accommodations shall include, but not be limited to, pier and plate, installation of filter fabric and select fill, etc. Such work shall be performed as directed by the Engineer and in accordance with contract specifications and latest edition of water mains standards and specifications.

2b.Sewer Accommodations:

When sewer construction is to be performed in this contract, Contractor shall be required, if warranted by field conditions, and at locations designated by the Resident or Borough Engineer, to change the horizontal alignment of sewer facilities (if possible) including but not limited to all additional labor, material, work method accommodations, furnishing, delivering and construction of additional manholes or modification of manholes/catch basins, extending chute connections, house connections, using alternate materials and methods, poured-in-place structures, etc., necessary in order to complete sewer installation and, avoid gas interferences in the project area, including street intersections. The term sewer facility shall include, but not be limited to, all sewer pipe and appurtenances, manholes, catch basins, catch basin chutes, etc. Such work shall be performed as directed by the Engineer and in accordance with contract specifications and latest edition of sewer standards and specifications.

3. Quantity Overruns, EP-7 Funded Bid Items:

No quantity overrun, in excess of one hundred twenty five (125) percent, shall be permitted for EP-7 funded bid items (gas) included in this contract, except when Resident Engineer determines that such overruns are caused by field modifications to planned City work, or approved construction methods, or contract scope changes. Overruns not paid by City shall be negotiated and paid to Contractor by gas facility operator who then shall be entitled to reimbursement by NYCDEP under established cost sharing procedures.

4. Changes And Extra Work:

This section is not applicable to work defined under "Emergency Reconstruction Contracts" or so-called "Where and When Contracts" since these projects, by definition, inherently encounter unanticipated gas facilities and cannot be pre-engineered. In all other cases, any contract changes proposed for City work shall also cover and include all associated changes to support and protection of gas facilities affected by such changes to City work. In all other cases where the Contractor finds that City work cannot be performed as planned and specified and/or, as approved because of a need to support, protect and/or alleviate interferences from gas facilities that were not listed and/or shown, or incorrectly shown in contract plans and specifications, he shall immediately notify the Resident Engineer and the facility operators' representative of his findings. Resident Engineer shall promptly examine such claims and determine whether or not such work is covered by contract bid items and /or specifications (contract bid items and specifications shall include city contract items as well as EP-7 items). The Resident Engineer shall also

examine the claim to determine if the application of EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" is appropriate to resolve the claim. If upon examination, the Engineer determines that such field conditions were unanticipated (not shown and/or listed, or incorrectly shown in contract documents) and are not covered by bid items and contract specifications, he shall then direct the Contractor and the affected facility operator to negotiate the cost of supporting and protecting, and/or alleviating the impact on City work caused by such unanticipated gas facilities with each other with the understanding that the performance of City work shall continue during negotiations. If a cost agreement is reached, the Contractor and facility operator shall adjust such costs between themselves at no additional costs to the City contract. If the Contractor and affected facility operator do not reach an agreement concerning the price to be paid for the extra work within five (5) business days of the Engineer's directive to engage into such negotiations and, after considering: public safety and inconvenience, requirements of laws and regulations applicable to private utilities, integrity of all utility systems, including but not limited to sewer and water, gas, electric, telephone and, cable TV facilities, sound engineering practices, cost (long and short term) to all affected parties, and potential City work delays, then the Resident Engineer, depending on nature and severity of interferences with City work, shall either, direct the facility operator to relocate or replace its facilities at its own discretion and cost, reimbursable by NYCDEP under established gas cost sharing procedures or, direct the Contractor to perform the utility work on actual time, material and equipment costs basis pursuant to relevant contract requirements and amendments. Contract bid prices for any applicable items of work involved shall be applied, or converted to an allowance for time and material charges. Changes shall be for affected portions of utility work and, shall be processed with EP-7 funds.

5. Excavation:

All excavators shall notify the NYC/LI One Call Center at 1-800-272-4480 at least two (2) working days, not including the day of the call, but not more than ten (10) working days in advance of the start of any excavation work. The gas company(ies) will mark out its facilities within the project limits and provide Construction Inspector(s) during all excavation work in close proximity (within twelve (12) inches) to gas facilities. The Contractor shall exercise extreme caution when excavating in the vicinity of any gas facilities. Hand excavation shall be performed within twelve (12) inches of gas facilities. The Contractor prior to excavating underneath these facilities shall adequately support all gas facilities. Standard support details for gas facilities have been included in the specifications. Any damage to gas facilities shall be reported immediately to the gas company(ies). The Contractor shall be responsible for all cost associated with repairs made necessary by damages caused by his operations.

6. Backfilling And Street Restoration:

Backfilling operations and street restorations shall be in accordance with contract requirements.

7. Non-Responsive Bids:

Every gas (EP-7) bid item has a suggested "Not less than" value per unit indicated on contract bid sheet. Bids resulting in cost of less than suggested for EP-7 items are hereby prohibited and if submitted shall be considered NON-RESPONSIVE.

8. Minimum Clearances:

Clearance requirements for City work shall govern and supersede any clearance requirement of gas facility operator. Therefore, a minimum of twelve (12) inches clearance between private utilities and City water mains, sewers or related structures to be installed in this contract shall be maintained. When this clearance is not attainable, the Resident Engineer may allow a minimum of four (4) inches clearance. With less than twelve (12) inches clearance a neoprene/polyethylene shield (to be provided by facility operator) shall be installed as part of all work item specifications. However, if Resident Engineer determines that City work cannot be performed within allowable clearance and no reasonable City accommodation (no-cost change to City work) is possible, the City shall direct the facility operator to remove, relocate, shift, or alter their facility(ies) pursuant to the New York City Administrative Code.

9. Work By Facility Operator:

The facility operator may find it necessary to perform the following types of work during performance of City work: accommodating a contractor's request for gas facilities modifications (in order to facilitate City contractor's proposed construction method) or, remedial and emergency work on gas facilities proper with their own resources and materials if an approved method of construction for City work causes unanticipated disturbances to gas facilities or, replacing defective gas facilities when they are exposed by the Contractor and their actual conditions are observable by the facility operator. Also included in the above category of defective gas facilities are: the presence of environmental contaminants attributable to the gas facility in or around gas facilities. If such work is deemed required by the facility operator or if facility operator is directed by the City to address such deficiencies at any time during the course of construction, the Contractor shall modify the construction schedule at no cost to the City and allow the facility operator five (5) business days to perform such work without interferences. Additional costs to the facility operator (in cases of accommodations) or, Contractor (in cases of defective gas facilities) due to such gas work, if any, shall be the responsibility of the parties involved and not of the City. Such costs shall be a matter of adjustment between the Contractor and the facility operator.

10. Materials Furnished By Facility Operator:

It shall be the Contractor's responsibility to inspect material to be installed by him immediately upon delivery and advise the facility operator through its authorized representative, of all damaged materials. The Contractor at no additional costs to the City or the facility operator shall replace any material that is damaged or lost after the Contractor's inspection.

11. Liability And Insurance:

Notwithstanding the provisions of this contract, the existing division of liabilities to third parties shall remain the same as between the City and the company. Therefore, it is specifically agreed by the City, company and Contractor (by bidding on this contract) that for the purpose of any liabilities to third parties, that the City contractor performing work directly and physically relating to gas company facilities in this project, shall be deemed an agent of the company and not an agent of the City, the New York City Municipal Water Finance Authority, or the New York City Water Board. Contractor shall include the company as an additional insured on all insurance policies maintained to comply with the City's insurance requirements.

12. Width And Depth Of Excavation:

Contractor shall not be authorized to deliberately change trench or excavation widths and/or depth specified without Engineer's approval. Enlargement of any side of excavation up to eighteen (18) inches beyond pay limits (or inside face of sheeting) requested by the Contractor for the installation of certain types of sheeting may be granted. However, such enlargements or those greater than allowable shall not be approved when, in the sole judgment of the City, field conditions allow the water mains and sewer work to be performed within the limits specified and, the sole purpose of such enlargement request is to impact adjacent utilities (public or private) whose support and protection are part of this contract. Any approval shall be given at no additional cost to the City contract, including EP-7 funding, and all costs associated with unauthorized enlargements shall be the sole responsibility of the Contractor.

13. Depth And Crossing Angles Of Gas Facilities:

Where gas facilities are shown (or specified as) crossing proposed alignment of sewers, water mains, catch basins and chute connections or any other proposed excavations at specific angles (as measured off plans or sketches or specified in contract), it shall be understood that actual field measurements may deviate (plus or minus) forty-five (45) degrees from those shown or specified. The cover, or depth from street surface to top of facilities, shall be as shown or specified in contract documents, no deviation is to be assumed. Where gas facilities are not shown on contract documents, but their support and protection are otherwise included in this contract then, all references to facilities crossing at "various angles and depth" in the gas sections shall mean that such facilities are crossing sewer, water, catch basin and, catch basin chute, and other excavations at a ninety (90) degree angle to the proposed sheeting line or side of

excavation (for unsheeted trenches) with an allowable deviation of forty-five (45) degrees in any direction, except for catch basin chute excavation where the allowable deviation shall be sixty (60) degrees. Where the cover is not noted or specified, the bottom face of such facilities shall be assumed to be crossing catch basin chutes at a depth of three (3) foot eight (8) inches or less from the street surface. Paragraph No. 2 above shall apply in cases of distribution water main construction. Appropriate bid items and specifications are provided for cases where angle and depth are greater than stated above. This section also applies to work defined in "Emergency Reconstruction Contracts" or so-called "Where and When Contracts". These contracts are not pre-engineered and consequently have no drawings, sketches or determined locations and so, gas facilities encountered will be crossing existing and proposed sewer, water, catch basin/catch basin chutes and all appurtenances at various angles and depths.

14. Maintenance Of Traffic For Gas Work:

All work pertaining to gas bid items and specifications shall be performed within the contract maintenance of traffic plan as specified in the contract document. The bid price for the Maintenance and Protection of Traffic shall cover all work pertaining to gas items. The City shall make compensation for additional maintenance and protection of traffic items in connection with gas item of work only when such additional work is deemed reasonable and necessary by the Resident Engineer and is approved by him prior to its performance.

15. Relocated Gas And Temporary Systems Installation:

In cases where the Contractor is allowed to select the location for temporary construction such as, installation of dewatering headers, wells, well points, etc., he shall not disturb any gas facilities shown on sketches provided in this section. The only exception shall be, if the affected gas company agrees to such relocation and provided that the cost of such relocation is a matter of adjustment between the company and Contractor, and at no cost to the City.

16. Role Of Company Inspector:

In any case in which the City elects to perform some or all support and protection work with its own employees, personnel or contractors, the facility operator shall provide onsite inspectors to approve and certify such support and protection work (exclusive of City accommodations) performed by the City's own employees, personnel, and contractors. Facility operator's inspectors are not authorized to direct City contractor during the performance of contract work. They shall act through the City Resident Engineer and provide him/her required approvals and certifications, prior to preparing partial payments of EP-7 items, in a format and frequency to be prescribed by the appropriate City Head of Construction.

17. Coordination With Gas Company:

The Contractor shall be required to notify the gas company(ies), in writing, at least two (2) weeks prior to the start of final paving in order to allow companies to complete any unfinished gas work located within the area to be paved. Every effort shall be made to maintain gas service with minimum inconvenience to the public.

III - TECHNICAL SECTION

SECTION 6.01 - Trench Crossings; Support And Protection Of Gas Facilities And Services.

1. Description:

Under this section, the Contractor shall provide all labor, materials, equipment, and incidentals required to

support and/or protect the integrity of gas mains, services and appurtenances of any sizes, configurations, and operating pressures crossing trench excavations above subgrade for planned construction of sewers and water mains facilities. A gas service shall be defined as a gas pipe of three (3) inches in diameter or less branching from the main to a customer pick up point or property valve box. A gas main may be any size pipe that is part of a distribution or transmission network other than services described above. Crossings shall be defined as gas facilities spanning the width of excavation (one side to the other side). These crossings may be at various angles and depth as shown on "Gas Cost Sharing Work Standard Sketches Nos. 1 and 1A", and as specified in "General Provisions; Gas Cost Sharing Work Paragraph No. 13" and, at the locations shown or listed in contract documents. The gas company operating in the area, (facility operator), owns these facilities. The work shall be performed in accordance with contract specifications, plans, and at the directions of the Resident Engineer in consultation with the authorized representatives of the facility operator.

2. Method Of Construction:

A. Protection: In general, the gas facilities shall be protected as required by New York State Industrial Code 753. In particular, the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) directly below the pavement base to expose the gas facilities (marked out by facility operators) and to ascertain the clearances and cover of the facilities with respect to the proposed excavation. Upon exposing the affected facilities sufficiently, at the discretion of the Resident Engineer, to ascertain the foregoing, Contractor shall be permitted to proceed with a combination of hand and machine excavation, as appropriate, outside a zone of protection whose limit shall be defined as a perimeter located twelve (12) inches from the outside face of each gas facility crossings (See "Gas Cost Sharing Work Standard Sketch No. 2"). If the facilities are in direct interference with City work, meaning that "Minimum Clearances" described in "General Provisions; Gas Cost Sharing Work Paragraph No. 8" cannot be maintained, and excavation has to be temporarily or permanently abandoned then this particular location shall become a test pit and dealt with as specified in Section 6.07, and "General Provisions; Gas Cost Sharing Work Paragraphs Nos. 2 and 8".

B. Support: Gas mains or services crossing excavations equal or less than four (4) feet wide are generally self supporting, unless field conditions as determined by the Resident Engineer require otherwise. The support requirements for gas mains and services crossing excavations greater than four (4) feet wide shall be as shown on the attached "Gas Cost Sharing Work Standard Sketch No. 1" and Contractor shall use sheeting methods that permit the maintenance of gas facilities in their existing locations and configurations. Alternate methods equivalent to those shown on the sketch or accommodations by the facility operator proposed by the Contractor in order to facilitate the execution of the specified work shall be allowable, provided that prior approval is obtained by the Contractor from the Engineer and the facility operator. The support and protection of gas facilities crossings shown on plans, drawings, listings or otherwise identified in this contract shall not be circumvented with the issuance of so called "order outs".

3. Method Of Measurement:

The Contractor shall be paid for supporting and/or protecting gas facilities crossing trench excavations under the appropriate bid items covered by this section. The Contractor shall be directly responsible to the facility operator for the total cost of using any alternate method requiring the use of resources owned by the facility operator. Regardless of the method used, the City shall pay the bid price for the appropriate support and/or protect item of work. The average rate charged by the facility operator for alternate support and protection work such as, disconnecting and reconnecting gas services is listed in attached "Schedule GCS-A".

4. Payment Restrictions:

These items shall not be paid for: gas services crossing unsheeted water main trench excavation; abandoned gas main/services identified by facility operator; gas mains/services crossing trench excavations for fire hydrant branch connections pipes, catch basins and/or chutes (sewer drain pipe), house sewer and/or water services; gas facilities encroaching any face of excavation for sewer and/or

water construction, all of which are covered under other contract sections. Also this item shall not be paid for new gas mains and services crossing water trenches when trenching for such new facilities has been performed by the Contractor in common with trench excavation for City work (overlapping trench limits). The cost of supporting and protecting such gas facilities crossings shall be deemed included in the cost of trench excavation for the new gas facilities. This payment restriction shall apply even if such common trench gas excavation is not part of the contract. The prices bid for items covered by this section represent full compensation to Contractor to completely perform the work described. No other bid items shall be combined with these items in order to pay for gas main and/or services crossing excavations specified herein.

5. Method Of Payment:

Each (Ea.) gas facility crossing trench excavation as described in these specifications shall be counted for payment.

6. Price To Cover:

The cost of timber/steel supports installed for gas facilities shall be included in the bid price. The bid price for each crossing shall also cover all additional supervision, labor, material (except those provided by the facility operator), equipment and insurance necessary to completely maintain the gas facilities without disruption of service to the customers and in accordance with contract plans, specifications and facility operator standards. The price shall also include: changes of method of operations; sheeting modifications where necessary to accommodate the gas facilities crossings; installation and removal of water pipe under gas facilities (so called "snaking"); extra care during excavation (including hand excavation under existing single and multiple gas facilities); extra backfilling and compaction around, over and under gas facilities; installation and removal of sheeting around gas facilities; associated maintenance and protection of traffic; barricades; and traffic plates that may be required to temporarily close and/or complete the work.

SECTION 6.02 - Extra Excavation For The Installation Of Catch Basin Sewer Drain Pipes With Gas Interferences.

1. Description:

Under this item, the Contractor shall provide all labor, materials, equipment, insurance, and incidentals for the extra excavation associated with the installation of catch basin sewer drain pipes (chute) under gas facilities of various sizes crossing the trench excavation at various angles and depth at the locations shown in the contract documents and also, for the support and protection of these facilities during associated excavation and backfill operations. The gas company operating in the area, (facility operator), owns these facilities.

2. Method Of Measurement:

The bid price shall be per location (Each) where extra excavation is required when catch basin sewer drain pipes are installed at an upstream invert depth lower than four (4) feet (up to a maximum of six (6) feet) from the proposed pavement grade because the bottom faces of interfering gas mains and appurtenances are located at a depth greater than three (3) foot eight (8) inches from proposed pavement surface (See "Gas Cost Sharing Work Standard Sketch No. 4").

3. Method Of Construction:

Incremental cost responsibility for chute excavation is determined by the first private facility encountered starting from catch basin structure proper and that prevents the installation of the chute connection at an upstream cover less than or equal to three (3) feet or any other minimum cover required to avoid City facilities (e.g. water, sewer, etc.) as directed by the Resident Engineer.

4. Payment Restrictions:

This item shall not apply and related bid item shall not be paid in cases where:

A. Upstream invert chute is more than six (6) feet deep because of gas facilities.

B. Chute cannot be installed above existing gas facilities because of interferences with other private facilities that are not otherwise covered under this contract, regardless of upstream invert depth.

The above cases shall be at no cost to the City, but shall be a matter of adjustment between the Contractor and the facility operator(s).

5. Price To Cover:

The bid price shall cover the additional cost of all additional supervision, labor, materials, equipment and insurance, to complete the installation of catch basins and associated sewer connections in accordance with the contract plans and specifications. The price shall include: excavation by hand around and under single and multiple gas facilities; locating, supporting and protecting gas facilities; backfilling and all other items necessary to perform all work incidental thereto including: installation and removal of drain pipe under gas facilities ("snaking"); widening of trenches to facilitate the above work; subsequent additional backfill and pavement restoration; modifying precast catch basin window to accommodate connection; changing sheeting method and configuration to accommodate gas facility crossings; maintenance and protection of traffic; barricades; and installation of traffic plates that may be required to temporarily close and/or complete the work. The price shall not include removal of ledge rock and/or excavation of boulders in open cut.

SECTION 6.02.1 - Extra Excavation For The Installation Of Catch Basin Sewer Drain Pipes With Upstream Inverts Greater Than Six (6) Feet.

1. Description:

Under this item, the Contractor shall provide all labor, materials, equipment, insurance and incidentals for the extra excavation of catch basin chutes where the upstream invert is greater than six (6) feet under gas facilities of various sizes crossing the trench excavation at various angles and depth at the locations shown in the contract documents or as determined by field conditions and also, for the support and protection of these facilities during the associated excavation, sheeting and backfilling operations.

2. Method Of Measurement:

The bid price shall be per location (Each) where extra excavation and sheeting is required when the catch basin chute installed at an upstream invert depth lower than six (6) feet from the proposed pavement grade because the bottom faces of the interfering gas mains and appurtenances are located at a greater depth than three foot eight inches from the proposed pavement surface only.

3. Method Of Construction:

Incremental cost responsibility for chute excavation is determined by the first private facility encountered during such excavation when initiated from catch basin structure and that prevents the installation of the chute at an upstream cover less than or equal to three (3) feet or any other cover required to avoid City facilities as directed by the Resident Engineer.

4. Payment Restriction:

This item shall not apply and related bid item shall not be paid in cases where:
Upstream invert chute is less than or equal to six (6) feet deep because of gas facilities. Section 6.02 shall be paid.

5. Price To Cover:

The bid price shall cover the additional cost of all supervision, labor, materials, equipment and insurance to complete the installation of catch basin and associated sewer connections in accordance with the contract plans and specifications. The price shall include: excavation by hand around and under single and multiple gas facilities; locating, supporting and protecting gas facilities incidental thereto; widening of trenches to facilitate the above work; subsequent additional backfilling and pavement restoration; modifying pre-cast basin window to accommodate connection; the installation of catch basin with deeper sumps as specified; additional sheeting and changes in sheeting method and configuration to accommodate gas facility crossings; maintenance and protection of traffic; barricades; and installation of traffic plates that may be required to temporarily close and/or complete the work.

SECTION 6.03 - Removal Of Abandoned Gas Facilities. All Sizes.

1. Description:

Under this section the Contractor shall provide all labor, materials, equipment, insurance and, incidentals required for the removal of abandoned gas mains, services, or appurtenances thereof, located within the street shown on the contract plans, owned by gas company operating in the project area (facility operator), used or to be used for or in connection with or to facilitate the conveying, transportation, distribution or furnishing of gas (natural or manufactured or mixture of both) for light, heat, or power, but does not include property used solely for or in connection with business of selling, distributing or furnishing of gas in enclosed containers. Such removal shall include only abandoned gas facilities that interfere with (i.e. cause additional work) City work.

2. Determination Of Operating Status Of Gas Facilities:

The Contractor shall notify facility operator, as required by New York State Industrial Code 753. Gas facilities shall not be removed without the approval of the facility operator whose authorized representative shall certify in writing (specific facility or area wide facilities certification) and in a timely manner acceptable to the Resident Engineer that abandoned facilities are free of combustible gas and any other environmental contaminants prior to removal. The Resident Engineer shall rely on facility operator's certification. The facility operator may request the excavation of test pits (See Section 6.07) for this determination ahead of City work and, Contractor shall provide safe access, facilitate and permit facility operator to enter test pit excavations for the purpose of testing gas facilities to be removed by the Contractor. However, facility operator may prefer to make this test during performance of City work, in order to issue the above certification. This shall be permitted provided that it is agreed that additional costs, if any resulting from this choice shall be a matter of adjustment between the Contractor and facility operator only, and at no cost to the City.

3. Restrictions:

The facility operator shall be solely responsible for its contaminated gas facilities, surrounding contaminated soil and their disposal and abatement procedures, unless contract bid items are applicable and provided for such work. In such cases, the quantity removed shall be charged to EP-7 bid item "UTL-GCS-2WS - GAS INTERFERENCES AND ACCOMMODATIONS" at the City bid prices.

4. Method Of Measurement:

Abandoned gas pipeline removal shall be measured for payment per linear foot of pipe and appurtenances removed.

5. Price To Cover:

The price shall cover all additional cost of supervision, labor, materials, equipment, and insurance necessary to complete this work in accordance with the contract plans and specifications, including excavation by hand around and under other City and facility operator owned properties and, where necessary, support and protection of such properties. The price shall also cover breaking, cutting, and/or burning of abandoned gas pipes and their disposal from the site; sealing open ends remaining in the excavation with concrete or caps (caps to be provided by the facility operator) and backfilling of the area where the pipeline has been removed with clean backfill. The price shall also include any required dump charges. This item does not include any type of extra excavation, backfilling, compaction, pavement removal and restoration associated with abandoned gas facilities removal, all of which are covered under Section 6.06.

SECTION 6.03.1 - Removal Of Abandoned Gas Facilities With Possible Coal Tar Wrap. All Sizes. (For National Grid Work Only)

1. Description:

Under this section the Contractor shall provide all labor, materials, equipment, insurance and, incidentals required for the removal of abandoned gas mains, services or appurtenances thereof, located within the street shown on the contract plans, owned by the gas company operating in the project area (facility operator), used or to be used for or in connection with or to facilitate the conveying, transportation, distribution or furnishing of gas (natural or manufactured or mixture of both) for light, heat, or power, but does not include property used solely for or in connection with business of selling, distributing or furnishing of gas in enclosed containers. Such removal shall include only abandoned gas facilities that interfere with (i.e. cause additional work) City work. These gas facilities may be coated with Coal Tar Wrap and so, may require special handling and disposal methods as specified in National Grid Standard Operating Procedure 12-2, Coal Tar Wrap Handling and 12NYCRR56.

2. Determination Of Operating Status Of Gas Facilities:

The Contractor shall notify facility operator, as required by New York State Industrial Code 753. Gas facilities shall not be removed without the approval of the facility operator whose authorized representative shall certify in writing (specific facility or area wide facilities certification) and in a timely manner acceptable to the Resident Engineer that abandoned facilities are free of combustible gas and any other environmental contaminants prior to removal. The Resident Engineer shall rely on the facility operator's certification. The facility operator may request the excavation of test pits (See Section 6.07) for this determination ahead of City work and, the Contractor shall provide safe access, facilitate and permit facility operator to enter test pit excavations for the purpose of testing gas facilities to be removed by the Contractor. However, the facility operator may prefer to make this test during performance of City work, in order to issue the above certification. This shall be permitted provided that it is agreed that additional costs, if any, resulting from this choice shall be a matter of adjustment between the Contractor and the facility operator only, and at no cost to the City contract. Should such investigation result in the determination that the abandoned gas facilities do not contain Coal Tar Wrap then the removal of said facilities shall be covered under separate item (See Section 6.03).

3. Requirements:

The City Contractor shall excavate abandoned gas facility sufficiently, either in its entirety, or at locations determined by Contractor to allow the removal of Coal Tar Wrap (if present on the abandoned gas facility) and to facilitate the safe extraction of manageable lengths of abandoned pipe without damage to adjacent facilities, utilities or City structures either parallel to or crossing above or below abandoned gas facility. The Contractor is to allow access to the designated cutting points within the Contractor's trench by authorized National Grid personnel who will remove the Coal Tar Wrap as per National Grid procedures. This work by National Grid personnel shall be performed in a timely fashion and shall not unduly impede the Contractor's progress and/or productivity. Upon completion of the coating removal, the Contractor shall be allowed to cut, burn or grind the gas facility and remove the section of abandoned pipe. The

Contractor at a site designated by the Contractor shall stockpile the removed pipe. The facility operator will be responsible to provide trucking and disposal services with its own personnel and shall remove the stockpiled pipes during off hours or during such time as agreed to by the Contractor. Since the pipe removed will remain the property of the facility operator and is to be disposed of by the facility operator, the facility operator shall be responsible for any required notifications, filings, dump charges and incidentals associated with the disposal of abandoned gas facilities found to contain Coal Tar Wrap.

4. Method Of Measurement:

Abandoned gas pipeline removal shall be measured for payment per linear foot of pipe and appurtenances removed.

5. Price To Cover:

The price shall cover all additional cost of supervision, labor, materials, equipment and insurance necessary to complete this work in accordance with the contract plans and specifications, including excavation by hand around and under other City and facility operator owned properties and, where necessary, the support and protection of such properties. The cost shall also include hand excavation in the area(s) of proposed abandoned pipe cut(s), cutting and/or burning of abandoned gas pipes and stockpile of removed sections of abandoned pipe and associated maintenance and protection of traffic, blocking and temporary fencing if required. The unit price shall also cover sealing open ends remaining in the excavation with concrete or end caps (end caps to be provided by the facility operator) and backfilling of the area where the abandoned pipeline has been removed with clean backfill material. This item does not include any type of extra excavation, backfilling, compaction, pavement removal and/or restoration (temporary and permanent) associated with abandoned pipe removal ("lost trench"), all of which are covered under separate Section 6.06. The price shall also include allowance for any loss of productivity by the Contractor due to required facility operator work to remove pipe coating and prepare pipe for cutting as well as any change in Contractor's excavation method, additional trucking and/or stockpiling costs.

SECTION 6.03.1a - Removal Of Abandoned Gas Facilities With Possible Coal Tar Wrap. All Sizes. (For Con Edison Work Only)

1. Description:

Under this section the Contractor shall provide all labor, material, equipment, insurance and, incidentals required to prepare abandoned gas mains, services and appurtenances thereof located within the street shown on contract plans, owned by the gas company operating in the project area (facility operator), for removal due to interference with proposed City work. These abandoned gas facilities were, at one time, used for or in connection with or to facilitate the conveying, transportation, distribution or furnishing of gas (natural, manufactured or a combination of both) for light, heat, or power, but does not include property used solely for or in connection with business of selling, distribution or furnishing of gas in enclosed containers. Such preparation for removal shall include only abandoned gas facilities that interfere with (i.e. cause additional work) City work. These gas facilities may be coated with Coal Tar Wrap which may contain asbestos or PCB's and so, may require special handling and disposal methods as specified in Con Edison - ASBESTOS MANAGEMENT MANUAL, CHAPTER 6 - ASBESTOS WORK PROCEDURES, SECTION 06.04 - COAL TAR WRAP REMOVAL. For under 25' (feet) in length and an approved NYC-DEP variance for over 25' (feet).

2. Determination Of Operating Status Of Gas Facilities:

The Contractor shall notify facility operator, as required by New York State Industrial Code 753. Gas Facilities shall not be removed without the approval of the facility operator whose authorized representative shall certify in writing (specific facility or area wide facilities certification) and in a timely manner acceptable to the Resident Engineer that abandoned facilities are free of combustible gas and any other environmental contaminants prior to removal. The Resident Engineer shall rely on the facility

operator's certification. The facility operator may request the excavation of test pits (See Section 6.07) for this determination ahead of City work and Contractor shall provide safe access, facilitate and permit facility operator to enter test pit excavations for the purpose of testing gas facilities. However, the facility operator may prefer to make this test during performance of City work in order to issue the above certification. This shall be permitted provided that it is agreed that additional costs, if any, resulting from this choice shall be a matter of adjustment between the Contractor and the facility operator only, and at no cost the City contract. Should such investigation result in the determination that the abandoned gas facilities do not contain Coal Tar Warp then the removal of said facilities shall be covered under separate item (See Section 6.03).

3. Requirements:

The Contractor shall excavate abandoned gas facility sufficiently, either in it's entirety, or at locations determined by Contractor to allow the removal of Coal Tar Wrap (if present on the abandoned gas facility) and to facilitate the safe extraction of manageable lengths of abandoned pipe without damage to adjacent facilities, utilities or city structures either parallel to or crossing above or below abandoned gas facility. The Contractor is to allow access to the designated cutting points within the Contractors trench by authorized Con Edison personnel who will remove the Coal Tar Wrap as per Con Edison and/or NYC-DEP approved procedures. This access shall conform to all applicable codes, rules & regulations. This work by Con Edison personnel shall be performed in a timely fashion and shall not unduly impede the Contractors progress and/or productivity. Upon completion of the coating removal, the Contractor shall be allowed to cut, burn or grind the gas facility and remove the section of abandoned pipe. Contractor shall designate a specific site to stockpile those removed pipes. The facility operator will be responsible to provide trucking and disposal services with its own personnel and shall remove the stockpiled pipes during off hours or during such time as agreed to by the Contractor. Since the pipe removed will remain the property of the facility operator and is to be disposed of by the facility operator, the facility operator shall be responsible for any required notifications, filings, dump charges and incidentals associated with the disposal of abandoned gas facilities found to contain Coal Tar Wrap.

4. Method Of Measurement:

Abandoned gas facility removal shall be measured for payment per linear foot of pipe and appurtenances removed.

5. Price To Cover:

The price shall cover all additional cost of supervision, labor, materials, equipment and insurance necessary to complete this work in accordance with the plans and specifications, including, but not limited to, excavation by hand around and under other City and facility operator owned properties and, where necessary, the support and protection of such properties. The cost shall also include hand excavation in the area(s) of proposed abandoned pipe cut(s), cutting and/or burning of abandoned gas pipes and stockpile of removed sections of abandoned pipe and associated maintenance of traffic, blocking and temporary fencing if required. The unit price shall also cover sealing open ends remaining in the excavation with concrete or end caps (end caps to be supplied by facility operator) and backfilling of the area where the abandoned pipeline has been removed with clean backfill material. This item does not include any type of extra excavation, backfilling, compaction, pavement removal and/or restoration (temporary and permanent) associated with abandoned pipe removal ("lost trench"), all of which are covered under separate Section 6.06. The price shall also include allowance for any loss of productivity by the Contractor due to required facility operator work to remove pipe coating and prepare pipe for cutting as well as any change in Contractor excavation method, additional trucking and/or stockpiling costs.

SECTION 6.04 - Adjust Hardware To Grade Using Spacer Rings/Adaptors. (Street Repaving.)

1. Description:

Under this section, the Contractor shall provide all labor, supervision, materials, equipment, insurance and incidentals required to adjust to final grade gas street surface hardware located within the contract area boundaries shown on the plans. The gas company operating in the area, (facility operator), owns these facilities. The work shall be performed in accordance with the contract plans, specifications and at the directions of the Resident Engineer in concurrence with authorized representative of the facility operator.

2. Materials:

The facility operator shall furnish and deliver all prefabricated hardware parts required. These include adaptors for the grade adjustment proper and new street hardware if existing ones are found to be defective, all in accordance with the facility operator standards and City rules and regulations. The Contractor shall notify the facility operator of the installation schedule at least three (3) business days before materials are required on the site. Should the facility operator fail to deliver the necessary material according to any schedule mutually agreed upon by the Contractor and facility operator, the City shall not be responsible for any delays attributable thereto, nor for the failure of delivery of such materials. On project where material storage is not permitted on site, the facility operator shall deliver the required material to the Contractor's yard and it shall be the Contractor's responsibility to transport the material to the work site when needed for installation. It shall also be the Contractor's responsibility to inspect the materials to be installed by him immediately upon delivery and advise the facility operator through its authorized representative, of all damaged materials. The Contractor at no additional expense to the City or the facility operator shall replace any material that is damaged or lost after the Contractor's inspection.

3. Method Of Measurement:

The Contractor shall be paid for each six (6) inch round box and/or nine (9) inch square box adjusted to grade regardless of adjustment height requirements.

4. Price To Cover:

The unit price bid for this item shall include all additional labor, supervision, insurance, equipment and, material (except those to be provided by the facility operator), required to adjust each box to grade as required in the contract plans and specifications. The bid price shall also include the removal of existing frames and covers from existing facilities to be salvaged and returned to the facility operator and, all material transportation from the Contractor's material storage yard to the work site. In addition the bid price shall include "chipping" around existing box using appropriate means and methods where grinding is required.

SECTION 6.05 - Adjust Hardware To Grade By Resetting. (Road Reconstruction.)

1. Description:

Under this item, the Contractor shall provide all labor, supervision, materials, equipment, insurance and incidentals required to adjust to the proposed grade gas street surface hardware located within the contract area boundaries shown on the plans. The gas company operating in the area, (facility operator), owns these facilities. The work shall consist of either building up or lowering or resetting the casting by removing the existing frame and cover building up or decreasing the existing installation, replacing the frame and/or cover if damaged or worn out, as determined by the Resident Engineer, with a new frame and/or cover furnished by the owner, and setting the frame and cover to new elevation. The work shall be performed in accordance with the contract plans, specifications and at the directions of the Resident Engineer.

2. Materials:

The facility operator shall furnish and deliver all new hardware parts required. The Contractor shall furnish materials such as mortar, bricks and concrete in compliance with contract requirements. At locations

where high-early strength concrete is required under this contract to be placed adjacent to gas facilities, then the requirement for concrete shall be high-early strength complying with the current New York State Department of Transportation, Standard Specifications for Class F concrete. Existing castings may be replaced as required and deemed necessary by the Engineer and by City rules and regulations. The Contractor shall install the new castings of various sizes furnished by the facility operator. The Contractor shall notify the facility operator of the installation schedule at least three (3) business days before materials are required on the site and, shall provide off-loading services to the facility operator. Should the facility operator fail to deliver the necessary material according to any schedule mutually agreed upon by the Contractor and facility operator, the City shall not be responsible for any delays attributable thereto, nor for the failure of delivery of such materials. Such delays shall be a matter of adjustment between the Contractor and the facility operator. On project where material storage is not permitted on site, the facility operator shall deliver the required material to the Contractor's yard and it shall be the Contractor's responsibility to transport the material to the work site when needed for installation. It shall also be the Contractor's responsibility to inspect the materials to be installed by him, immediately upon delivery and advise the facility operator through its authorized representative, of all damaged materials. The Contractor at no additional expense to the City or the facility operator shall replace any material that is damaged or lost after the Contractor's inspection.

3. Methods Of Construction:

The Contractor shall remove and reinstall existing castings or install new castings to the proposed grade. Setting and resetting the castings shall be done with mortar and brick according to the standards of the facility operator. Work shall be performed in a workmanlike manner. Castings that are deemed unacceptable for resetting shall remain the property of the facility operator and he shall be responsible for their removal and proper disposal from site. No traffic shall be allowed on adjusted street hardware until permitted by the Engineer.

4. Method Of Measurement:

The Contractor shall be paid for each gas hardware adjusted to grade regardless of size or adjustment height requirements (up or down).

5. Price To Cover:

The unit price bid for this item shall include all additional labor, supervision, insurance, equipment and, material (except those to be provided by the facility operator), required to adjust each gas hardware to grade as required in the contract plans and specifications. The bid price shall also include the removal of existing frames and covers from existing facilities; building up the existing installations with bricks and mortar, or lowering the existing installation by removing bricks and mortar; replacing damaged frames and/or covers with new frames and/or covers furnished by the facility operator; setting the frames and covers to the new elevations; protect existing installations; repair minor structural damages to existing installations prior to resetting frames; unloading of furnished castings at the Contractor's yard and transporting castings from the Contractor's yard to the job site as required; completing the work in accordance with the contract plans, specifications and, at the directions of the Engineer. In addition the bid price shall include "chipping" around existing gas facilities using appropriate means and methods where grinding is required.

SECTION 6.06 - Special Care Excavation And Backfilling.

1. Description:

Under this section, the Contractor shall provide all labor, materials, equipment, insurance and incidentals required to support and protect the integrity of live gas facilities including mains, services, related structures and appurtenances during excavations. The gas company operating in the area, (facility operator), owns these facilities. The work shall be performed in accordance with the contract plans, specifications and at the directions of the Resident Engineer in consultation with authorized

representatives of the facility operator.

2. Applicability Of Section:

This section shall apply to live gas facilities of various sizes located within two (2) feet of any face of unsheeted excavation, (unsheeted excavation refers to any excavation performed for city work and includes excavations performed that are to be subsequently sheeted using approved methods) and paralleling or, encroaching any face of excavation. Also, for crossings greater than forty-five (45) degrees and/or located at a cover depth greater than five (5) feet from existing street surface. Parallel facilities are not exposed at any time during excavation (See "Gas Cost Sharing Work Standard Sketch No. 5"). Encroaching facilities are partially exposed inside the limit of excavation (See "Gas Cost Sharing Work Standard Sketch No. 5"). This section shall also apply to gas facilities crossing catch basins excavation, and catch basins sewer connections (chutes) trench excavation only when extra depth (covered in other section), is not required for chutes installations because of such utilities interferences (See "Gas Cost Sharing Work Standard Sketch No. 3"). This section shall also apply to gas services (if shown or otherwise listed in contract documents) crossing unsheeted excavations for water mains, gas facilities crossing fire hydrant branch connections, house sewer and/or water service connections excavations. This section shall also apply for so called "loss trench", as described further, and for additional excavation (pavement and/or soil), backfilling, compaction, roadway base and pavement restoration due to abandoned gas facilities, only if removed by Contractor. If operating status of gas facilities cannot be determined prior to excavation then such facilities shall be considered live and this section shall fully apply. The excavation around fully exposed live gas facilities along and within limits of excavation (not crossings) shall be covered by this section also (not shown on "Gas Cost Sharing Work Standard Sketch No. 5"), however the support requirement, if any is required, of such facilities is beyond the scope of these specifications and therefore shall be the responsibility of facility operator to determine and prescribe, at no cost to the City contract, but shall be a matter of adjustment between the Contractor and facility operator.

3. Payment Restriction:

No special care excavation shall be paid for abandoned gas facilities paralleling and/or encroaching excavation and therefore are not in direct interference with City work. Except as allowed in this section, the bid item specified under this section shall not be used in combination with items covered under other sections for work done due to a particular gas facility. This item shall not be paid for new gas facilities when trenching for such new facilities has been performed by the Contractor of record in common with trench excavation for City Work (overlapping trench limits). The cost of excavating with care as defined in this section shall be deemed included in the cost of trench excavation for the new gas facilities. This restriction shall apply even if such gas common trench excavation is not part of the contract. If facilities are in direct interference with City work, meaning that "Minimum Clearances" described in "General Provisions; Gas Cost Sharing Work Paragraph No. 8" cannot be maintained and excavation has to be temporarily or permanently abandoned then this particular location shall become a test pit and dealt with as specified in Section 6.07 and "General Provisions; Gas Cost Sharing Work Paragraphs Nos. 2 and 8".

4. Method Of Construction:

All excavation in the vicinity of gas facilities shall be as required by NYS Industrial Code 753. Where these facilities are paralleling and located two (2) feet or less from the limits of the proposed excavation, the Contractor shall use hand excavation methods (pick and shovel or hand held power tools) to ascertain the clearances of these facilities with respect to the proposed excavation. Once the location of these facilities with respect to the proposed excavation is verified to the satisfaction of the Resident Engineer, the Contractor shall then proceed with a combination of hand and machine excavation as required preserving the integrity of the facilities. The installation of timber supports or underpinning, when soil foundation cannot fully support partially exposed pipes, may be required to prevent pipe movement as directed by the Resident Engineer.

5. Method Of Payment:

The unit price for this work item shall be based on cubic yard (CY) of average excavation with care and, is

to be considered as an incremental cost for performing City work with gas facilities interferences.

6. Method Of Measurement:

A. For Paralleling Facilities: Volume calculated as: Depth as measured from existing street surface to the bottom of unsheeted trench excavation allowable by OSHA regulations, multiplied by, the width measured as one (1) foot from the face of excavation toward the center of excavation, multiplied by the length of parallel facility, divided by twenty-seven (27) cubic feet per cubic yard (See "Gas Cost Sharing Work Standard Sketch No. 5"). The gas facility is no longer considered to be in interference once sheeting has been installed, therefore no further compensation for paralleling facilities as described above will be made.

B. For Encroaching Facilities: Volume calculated as: Depth of trench as allowable by OSHA, maximum up to five (5) feet multiplied by, the width of partially exposed pipe plus one (1) foot, multiplied by the length of facility encroachment, divided by twenty-seven (27) cubic feet per cubic yard (See "Gas Cost Sharing Work Standard Sketch No. 5").

C. Fully Exposed Gas Facilities: (Not shown on "Gas Cost Sharing Work Standard Sketch No. 5") along and inside trench and/or crossing trench at an angle greater than forty-five (45) degrees and/or a cover depth greater than five (5) feet from the existing street surface. The volume shall be measured as the depth of trench excavation multiplied by the distance measured along the sheeting line between two (2) points of intersections of the gas facilities and the sides of trench excavation, multiplied by the width of trench excavation.

D. For Additional Excavation And Restoration Due To So Called "Loss Trench", When The Integrity Of Pavement And Soil Above And Around Existing Live Gas Facilities Cannot Be Maintained Due To Its Lack Of Cohesiveness: Volume shall be calculated as: Depth of unsheeted trench excavation multiplied by width measured as distance of facility from closest edge of unsheeted excavation plus, width of facility proper plus, one (1) foot or a maximum width of three (3) feet multiplied by length of facility fully exposed divided by, twenty-seven (27) cubic feet per cubic yard (not shown on "Gas Cost Sharing Work Standard Sketch No. 5").

E. For Facilities Crossing Excavation For Catch Basins, Or Chutes Installations (When NYCDEP Funded) Or Fire Hydrant Branch Connections, Or Unsheeted Water Main Trench, Or House Sewer And/Or Water Services: Volume calculated as: Depth as measured from existing street surface to the bottom of the trench excavation multiplied by, the width taken as the outside diameter of pipe or the width of structure plus one (1) foot on either side (two (2) feet), multiplied by, the length of exposed facility crossing the trench, divided by twenty-seven (27) cubic feet per cubic yard (not shown on "Gas Cost Sharing Work Standard Sketch No. 5").

Overlapping volume dimensions measured as described above may occur when multiple facilities are paralleling excavations, encroaching excavations or crossing catch basins and catch basin chute installations. In such cases, all such facilities shall be counted as one limited by the extreme pipes, faces (See "Gas Cost Sharing Work Standard Sketch No. 2"). The volume shall then be calculated as described above.

7. Price To Cover:

The bid price shall also cover all additional supervision, labor, material, equipment and insurance necessary to excavate while protecting and maintaining (excluding supports for fully exposed live gas) gas facilities without disruption of service to the public and in accordance with contract specifications. The price shall also include, changes of sheeting method and excavation width configuration where necessary to accommodate gas facilities in their existing locations; difficulties during the installation of catch basins, chute connections, hydrant branch, and house sewer and water connections under or over gas facilities; loss of productivity due to slower rate of excavation (special care) during excavation, including the use of such methods as: hand excavation around existing single and multiple facilities, extra excavation and backfilling due to lost trench because of existing and adjacent gas facilities, compaction, removal of

sheeting from the facilities, extra roadway base restoration and temporary pavement, associated maintenance and protection of traffic, barricades, and traffic plates that may be required to temporarily close and/or complete the work.

SECTION 6.07 - Test Pits For Gas Facilities.

1. Description:

Under this section, the Contractor shall furnish all labor, materials, insurance, equipment and appliances necessary to excavate, sheet and, maintain test pits at locations approved by the Resident Engineer in consultation with the facility operator. Test pits shall be dug in order to ascertain exact locations, cover and invert elevations, clearances, alignment and operating status (live or dead) of existing gas facilities. The Contractor shall inspect jointly with the Resident Engineer and facility operator, gas facilities and other structures uncovered, take all relevant measurements and elevations as directed by the Resident Engineer. Tests to determine operating status of gas facilities shall be performed by facility operator. The pits shall be covered with steel plates during daytime nonworking hours, and uncovered, as required, until the inspection work is completed. Testing of gas facilities may require a maximum of four (4) hours. Then, the pits shall be backfilled with clean fill, and resurfaced with temporary pavement. All traffic shall be maintained and all safety measures as stipulated shall be complied with.

2. Methods Of Construction:

A. Excavation: Existing pavement to be removed shall be neatly cut along lines of removal with a saw or other approved equipment which leaves a neat straight joint line along the juncture with subsequently replaced pavement. Excavation in the vicinity of utilities and other structures shall be performed using hand tools. Use of hand operated pneumatic and electric jackhammers will be permitted only for breaking pavement and removal of masonry, concrete and boulders, or as otherwise directed by the Resident Engineer. The Contractor shall properly dispose of all materials excavated from test pits away from site. Test pits shall be excavated at locations shown on the contract drawings or as directed by the Resident Engineer. Additional test pits may be required and shall be excavated where required, as ordered by the Resident Engineer. All test pits shall be excavated to a depth and size necessary to locate the existing facilities. Sheeting shall be used when depth of excavation exceeds five (5) feet. The sheeting required shall be furnished and installed in full compliance with the State of New York and Federal Safety Codes requirements and as specified in contract, whichever is more stringent. Care shall be taken that no existing gas facilities or other structures are broken or damaged. All broken or damaged facilities shall be reported immediately to facility operator who shall decide whether such facilities shall be repaired or replaced by company forces or by City contractor and in conformance with "General Provisions; Gas Cost Sharing Work Paragraph No. 9". Contractor shall excavate all material encountered, including large masses of concrete, cemented masonry and boulders, as directed by the Resident Engineer. Any type of excavation protection used, shall satisfy the following:

   (a) Industrial Code Rule 753.
   (b) Prevent injury to workers and the public, and avoid damage to existing water, sewer, and gas pipes or other structures, and to pavements and their foundations, through caving or sliding of the banks of the excavation.

   Should it become necessary, as determined by the Resident Engineer, to enlarge any test pit in any dimension after sheeting has been placed, the Contractor shall remove portions of the sheeting, as necessary, enlarge the test pits as directed, and replace the sheeting without additional compensation for this work other than for the additional volume of material excavated.

B. Maintenance Of Test Pits: Excavated test pits shall be maintained free of debris and kept dry by the Contractor in order to permit the inspection and measurements and to determine the locations of facilities. In order to accomplish this, Contractor shall, upon completion of excavation and placement of sheeting (if depth greater than five (5) feet), furnish and install adequate steel plates and posting

over the excavated pits and shall temporarily remove all equipment debris and workers, and relocate barricades in order to open the full width of street to traffic during nonworking hours. The Contractor shall then, at no additional cost, relocate such barricades, barrels, cones and other warning devices and remove steel plates, as and when directed by the Resident Engineer to facilitate the inspection of exposed facilities. When work is being performed and the pits are not covered with steel plates, the Contractor shall provide complete and safe access to the test pits as may be required, and he shall provide construction barricades and maintain traffic at all times as shown or as directed by the Resident Engineer. Upon completion of test pit inspection by the Resident Engineer, the pit shall be backfilled by the Contractor as specified in contract, except that backfill material shall conform to contract specifications for such purpose.

C. Pavement And Sidewalk Restoration: After backfilling is completed, the Contractor shall construct a temporary pavement consisting of a minimum of four (4) inches thick asphaltic concrete mixture in roadway areas or a two (2) inches thick asphaltic concrete mixture in sidewalk areas in order to maintain existing pedestrian and vehicular traffic. This temporary pavement shall be maintained until permanent pavement and sidewalk replacement is constructed as specified in contract.

3. Measurements:

The quantity to be measured for payment shall be the number of cubic yards of material removed from within the limits of the pit dimensions as directed by the Resident Engineer. The volume occupied by existing pipes or other structures remaining within the maximum payment lines will not be deducted from the total volume measured except, where the cross sectional area of these facilities exceeds four (4) square feet. As determined by the Resident Engineer, the quantity measured for payment may be proportionate to a fair and reasonable estimate of gas responsibility in the total volume excavated.

4. Price To Cover:

The contract price bid per cubic yard for test pits shall cover all additional costs of labor, material, insurance, equipment, appliances and incidentals required to excavate test pits, including removal and disposal of excavated materials, sheeting, steel plating, backfill, compaction and temporary pavement and sidewalk restoration all in accordance with the specifications and as directed by the Resident Engineer. The price shall also include the cost of providing safe access to the excavation by facility operator for the performance of certain test to determine operating status of gas facilities prior to City work. The price shall also include support and protection of all gas facilities crossing excavation, paralleling and/or encroaching any face of excavation.

SECTION 6.09 - Trench Excavation and Backfill for New Gas Mains and Services (For National Grid Work Only)

1. Description:

Under this section, the contractor shall furnish all labor, materials, equipment, insurance, permits and incidentals required to break/remove roadway and sidewalk pavement, excavate, backfill and restore gas trenches. The trench to be excavated shall be determined by the size of the gas facility to be installed. The work shall be performed in accordance with applicable specifications, and/or at the direction of the Resident Engineer in consultation with the facility operator.

2. Materials:

All materials used to excavate and prepare trenches shall be supplied by the Contractor and be approved by the facility operator in consultation with the Resident Engineer.

3. Method of Construction:

Excavation – The Contractor shall saw cut and/or break and remove existing roadway which may include

but is not limited to, asphalt, concrete and cobblestone, utilizing approved equipment that leaves a neat straight joint line along the juncture with subsequently replaced pavement. Prior to starting the trenching operation, the contractor shall excavate the appropriate gas main tie-in pits at the extremities of the gas main sections to be replaced. Test pits shall be excavated to determine exact location of all tie-in pits and at appropriate intervals along proposed trench excavation to verify lane and clearances as shown on the contract plans. The tie-in pits shall be adequately protected by the contractor using wood fencing or steel traffic plates until such time when the facility operator has completed the tie-in work. The Contractor shall be permitted to excavate utilizing a combination of machine and hand excavation, as field conditions warrant, and as directed by the facility operator. The trench shall be adjusted so as to provide for a nominal cover on the new gas facilities or as required based on field conditions, applicable specifications, or as directed by the facility operator in consultation with the Resident Engineer. The width of the trench shall be as directed by the facility operator in consultation of the Resident Engineer. The bottom of the trench shall be graded smooth with a minimum cushion of 3 inches of clean sand and in conformance with applicable specification and be compacted, to minimize initial settlement and to avoid "point" support of new gas facilities. All stones projecting into the trench bottom shall be removed, and the voids backfilled before the new gas facilities are installed. Where streets are not to final grade, the cover shall be measured from the final grade, or the existing grade, whichever provides the deeper trench. Excavation in the vicinity of utilities and other structures shall be performed using hand tools. The contractor shall properly dispose of all materials excavated away from site. Size and location of excavation shall be as directed by the facility operator in consultation with the Resident Engineer. Trenches shall be excavated to a depth and size necessary to facilitate the installation of the new gas facility and in conformance with the applicable specification. All existing facilities that are encountered during trench excavating shall be protected in a manner suitable to the facility operator in consultation with the Resident Engineer. Tight sheeting shall be used, as required, based on field conditions and/or when the depth of excavation is equal to or greater than five feet. Skeleton type sheeting will not be permitted. The sheeting required shall be furnished and installed in full compliance with the State of New York and Federal Safety Code requirements and in compliance with applicable specifications and/or as directed by the facility operator in consultation with the Resident Engineer. Care shall be taken that no existing gas facilities or other structures are broken or damaged. Contractor shall excavate all material encountered necessary to facilitate the installation of the new gas facilities, and as directed by the facility operator. Care should be taken to avoid damage to existing utility facilities and structures, and to pavements and their foundations, and to avoid caving or sliding banks within the excavation.

Maintenance of Trench Excavation - Excavated trenches shall be maintained free of debris and kept dry by the contractor. In order to accomplish this, contractor shall, upon completion of excavation and placement of sheeting (as required and/or if depth is equal to or greater than five feet), furnish and install adequate steel plates, as directed by the facility operator in consultation with the Resident Engineer, and posting over the excavated trenches and shall temporarily remove all equipment debris and workers, and relocate barricades in order to open the full width of street to traffic during non-working hours, as required based on DOT requirements. National Grid forces will perform all live gas main connections, dead gas main cut-outs, and/or service work associated with disconnecting and reconnecting from old to new gas main The Contractor shall then, at no additional cost, relocate such barricades barrels, cones and other warning devices and remove steel plates, as and when directed by the facility operator in consultation with the Resident Engineer to facilitate the installation of the new gas facilities. When work is being performed and the excavations are not covered with steel plates, the Contractor shall provide complete and safe access to the trench as may be required, and shall provide construction barricades and maintain traffic at all times as shown or as directed by the facility operator in consultation with the Resident Engineer. The contractor has the responsibility to maintain and set to grade all National Grid hardware during backfill and pavement restoration. Upon completion of installation of the new gas facility, the trench excavation shall be backfilled by the contractor in accordance with Contract requirements and all backfill material shall conform to contract specifications for such purpose.

Pavement and Sidewalk Restoration - After backfilling is completed, the contractor shall install temporary pavement consisting of six inches (6") thick asphaltic concrete mixture in roadway areas or a two inches (2") thick asphaltic concrete mixture in sidewalk areas in order to maintain existing pedestrian and vehicular traffic. This temporary pavement shall be maintained until permanent replacement as specified in contract. Permanent pavement restoration shall be as required by the appropriate contract

specifications and as directed by the Resident Engineer.

4. Method of Measurement:

The quantity to be measured for payment shall be the number of cubic yards (C.Y.) of trench actually excavated, including roadway pavement, base and/or sidewalk concrete removed within the limits of the trench as directed by the Resident Engineer in consultation with the facility operator. The volume occupied by existing pipes or other structures will be deducted from the total volume measured as shown on contract drawing(s) Title: EP-7 SECT. 6.09 GAS SPECIALTY CONTRACTOR WORK, or as encountered based on existing field conditions.

5. Price to Cover:

The unit price bid per cubic yard for excavation shall include the cost of all supervision, labor, material, equipment, insurance and incidentals necessary to complete excavation trenches, including backfill, compaction testing and restoration of trenches and tie-ins pits as specified or shown on the contract, plans. The bid price shall also include the cost of coordinating the sewer and water main work to be performed by the contractor with the gas installation work to be performed by others. The price shall also include, associated maintenance of traffic, and traffic plates and openings and closings of plates as may be required in order to provide access to the facility operator during the new gas facility installation, and installing, removing and maintaining tight sheeting that may be required, cut, break and remove various thickness of surface and base pavement, excavate by hand, furnish, place and compact, in compliance with DOT requirements, clean sand backfill following installation of the gas facility. Any required removing, trucking, storing, and disposing of material shall be deemed included in the unit price. The price shall also include the cost of providing temporary pavement restoration. Permanent pavement restoration shall be deemed included in this item, as required and as directed by the Resident Engineer.

SECTION 6.09a Trench Excavation and Backfill for New Gas Mains and Services (For Con Edison Work Only)

1. Description:

Under this section, the contractor shall furnish all labor, materials, equipment, insurance, permits and incidentals required to break/remove roadway and sidewalk pavement, excavate, backfill and restore gas trenches. The trench to be excavated shall be determined by the size of the gas facility to be installed. The work shall be performed in accordance with applicable specifications, and/or at the direction of the Resident Engineer in consultation with the facility operator.

2. Materials:

All materials used to excavate and prepare trenches shall be supplied by the Contractor and be approved by the facility operator in consultation with the Resident Engineer. Clean sand backfill material shall be used and shall conform to Con Edison specification EO-1181-rev.6, General Specification for Backfilling of Trench and Small Openings.

3. Method of Construction:

Excavation – The Contractor shall saw cut and/or break and remove existing roadway which may include but is not limited to, asphalt, concrete and cobblestone, utilizing approved equipment that leaves a neat straight joint line along the juncture with subsequently replaced pavement. Prior to starting the trenching operation, the contractor shall excavate the appropriate gas main tie-in pits at the extremities of the gas main sections to be replaced. Test pits shall be excavated to determine exact location of all tie-in pits and at appropriate intervals along proposed trench excavation to verify lane and clearances as shown on the contract plans. The tie-in pits shall be adequately protected by the contractor using wood fencing or steel traffic plates until such time when the facility operator has completed the tie-in work. The Contractor shall be permitted to excavate utilizing a combination of machine and hand excavation, as field conditions warrant, and as directed by the facility operator. The trench shall be adjusted so as to provide for a

nominal cover on the new gas facilities or as required based on field conditions, applicable specifications, or as directed by the facility operator in consultation with the Resident Engineer. The width of the trench shall be as directed by the facility operator in consultation of the Resident Engineer. The width and depth of the trench shall conform to Con Edison Gas Operations drawing 309495 rev. 4, Trench Excavation for Gas Mains Up to 350 PSIG, or as directed by the facility operator in consultation of the Resident Engineer. The bottom of the trench shall be graded smooth with a minimum cushion of 3 inches of clean sand and in conformance with applicable specification and be compacted, to minimize initial settlement and to avoid "point" support of new gas facilities. All stones projecting into the trench bottom shall be removed, and the voids backfilled before the new gas facilities are installed. Where streets are not to final grade, the cover shall be measured from the final grade, or the existing grade, whichever provides the deeper trench. Excavation in the vicinity of utilities and other structures shall be performed using hand tools. The contractor shall properly dispose of all materials excavated away from site. Size and location of excavation shall be as directed by the facility operator in consultation with the Resident Engineer. Trenches shall be excavated to a depth and size necessary to facilitate the installation of the new gas facility and in conformance with the applicable specification. All existing facilities that are encountered during trench excavating shall be protected in a manner suitable to the facility operator in consultation with the Resident Engineer. Tight sheeting shall be used, as required, based on field conditions and/or when the depth of excavation is equal to or greater than five feet. Skeleton type sheeting will not be permitted. The sheeting required shall be furnished and installed in full compliance with the State of New York and Federal Safety Code requirements and in compliance with applicable specifications and/or as directed by the facility operator in consultation with the Resident Engineer. Care shall be taken that no existing gas facilities or other structures are broken or damaged. Contractor shall excavate all material encountered necessary to facilitate the installation of the new gas facilities, and as directed by the facility operator. Care should be taken to avoid damage to existing utility facilities and structures, and to pavements and their foundations, and to avoid caving or sliding banks within the excavation.

Maintenance of Trench Excavation - Excavated trenches shall be maintained free of debris and kept dry by the contractor. In order to accomplish this, contractor shall, upon completion of excavation and placement of sheeting (as required and/or if depth is equal to or greater than five feet), furnish and install adequate steel plates, as directed by the facility operator in consultation with the Resident Engineer, and posting over the excavated trenches and shall temporarily remove all equipment debris and workers, and relocate barricades in order to open the full width of street to traffic during non-working hours, as required based on DOT requirements. Con Edison forces will perform all live gas main connections, dead gas main cut-outs, and/or service work associated with disconnecting and reconnecting from old to new gas main The Contractor shall then, at no additional cost, relocate such barricades barrels, cones and other warning devices and remove steel plates, as and when directed by the facility operator in consultation with the Resident Engineer to facilitate the installation of the new gas facilities. When work is being performed and the excavations are not covered with steel plates, the Contractor shall provide complete and safe access to the trench as may be required, and shall provide construction barricades and maintain traffic at all times as shown or as directed by the facility operator in consultation with the Resident Engineer. The contractor has the responsibility to maintain and set to grade all Con Edison hardware during backfill and pavement restoration. Upon completion of installation of the new gas facility, the trench excavation shall be backfilled by the contractor in accordance with Contract requirements and all backfill material shall conform to contract specifications for such purpose.

Pavement and Sidewalk Restoration - After backfilling is completed, the contractor shall install temporary pavement consisting of six inches (6") thick asphaltic concrete mixture in roadway areas or a two inches (2") thick asphaltic concrete mixture in sidewalk areas in order to maintain existing pedestrian and vehicular traffic. This temporary pavement shall be maintained until permanent replacement as specified in contract. Permanent pavement restoration shall be as required by the appropriate contract specifications and as directed by the Resident Engineer.

4. Method of Measurement:

The quantity to be measured for payment shall be the number of cubic yards (C.Y.) of trench actually excavated, including roadway pavement, base and/or sidewalk concrete removed within the limits of the trench as directed by the Resident Engineer in consultation with the facility operator. The volume occupied

by existing pipes or other structures will be deducted from the total volume measured as shown on contract drawing(s) Title: EP-7 SECT. 6.09 GAS SPECIALTY CONTRACTOR WORK, or as encountered based on existing field conditions.

5. Price to Cover:

The unit price bid per cubic yard for excavation shall include the cost of all supervision, labor, material, equipment, insurance and incidentals necessary to complete excavation trenches, including backfill, compaction testing and restoration of trenches and tie-ins pits as specified or shown on the contract, plans. The bid price shall also include the cost of coordinating the sewer and water main work to be performed by the contractor with the gas installation work to be performed by others. The price shall also include, associated maintenance of traffic, and traffic plates and openings and closings of plates as may be required in order to provide access to the facility operator during the new gas facility installation, and installing, removing and maintaining tight sheeting that may be required, cut, break and remove various thickness of surface and base pavement, excavate by hand, furnish, place and compact, in compliance with DOT requirements, clean sand backfill following installation of the gas facility. Any required removing, trucking, storing, and disposing of material shall be deemed included in the unit price. The price shall also include the cost of providing temporary pavement restoration. Permanent pavement restoration shall be deemed included in this item, as required and as directed by the Resident Engineer.

GAS COST SHARING STANDARD SPECIFICATIONS
SCHEDULE GCS-A

Average rate charged by utility companies to Disconnect and Reconnect Gas Services:

1. National Grid - $586.90 per Service/and Visit
2. Con Edison - $524.00 per Service/and Visit

IV - STANDARD SKETCHES; GAS COST SHARING WORK

Hereinafter attached are the following Standard Sketches for Gas Cost Sharing Work:

Sketch No. 1 - Support Requirements For Gas Mains And Services Crossing Excavation Greater Than 4' - 0" Wide At Any Angle

Sketch No. 1A - Support Requirements For Gas Mains Over 16" Diameter Up To And Including 48" Diameter Crossing Excavation At Any Angle

Sketch No. 2 - Typical Methods Of Measurement For Gas Crossings

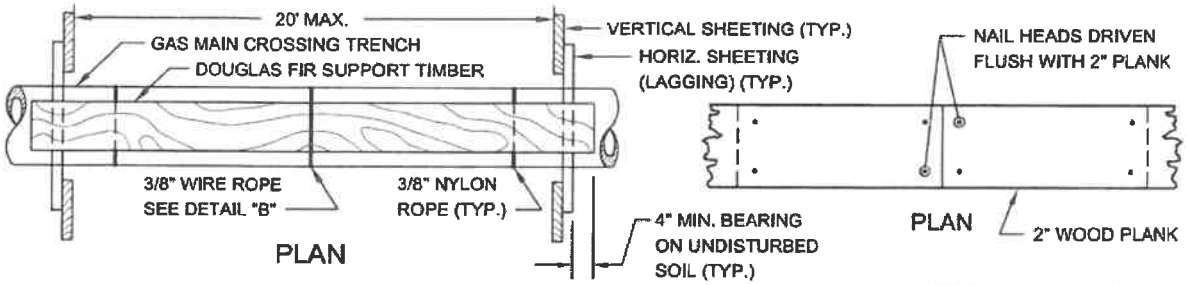
Sketch No. 3 - Utility Crossings During Catch Basin Chute Connection Pipe Installation

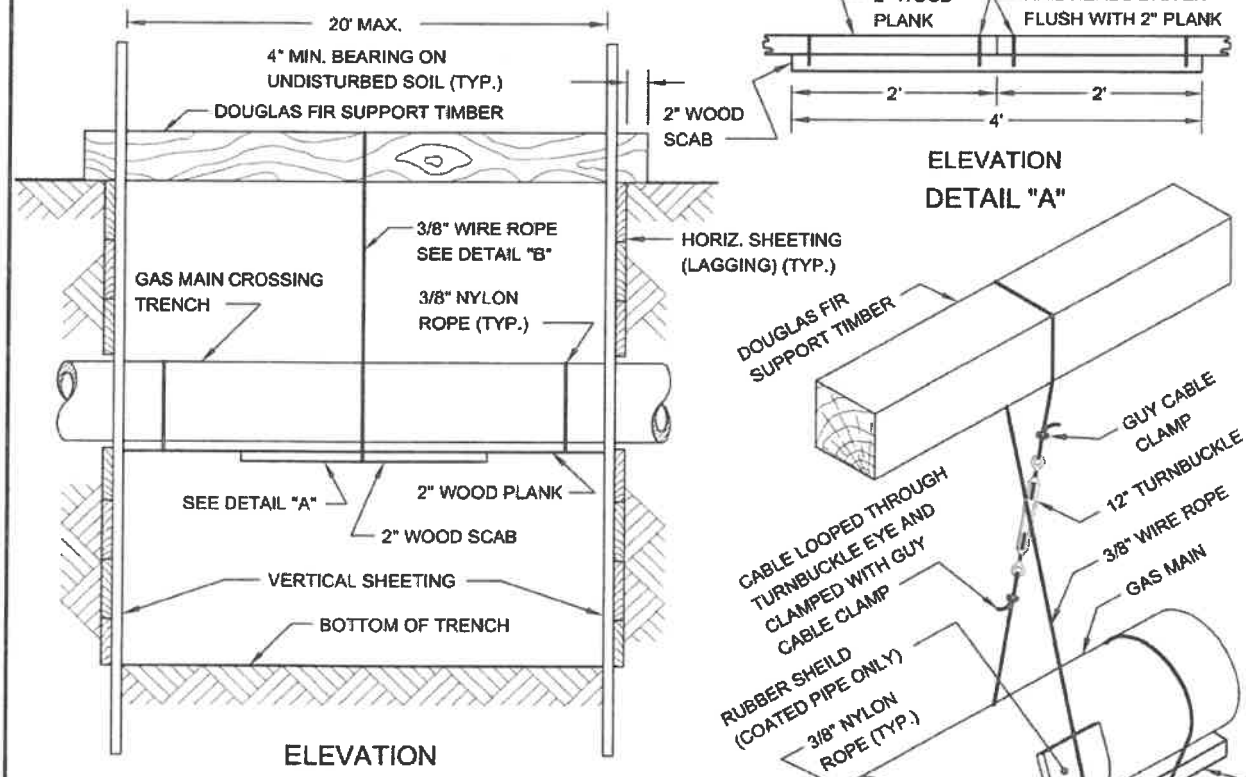
Sketch No. 4 - Utility Crossings During Catch Basin Chute Connection Pipe Installation (Extra Depth)

Sketch No. 5 - Gas Main Encroachment On And/Or Parallel To Excavation Of Unsheeted Trench

GAS COST SHARING WORK (SKETCH NO. 1)

SUPPORT REQUIREMENTS FOR GAS MAINS AND SERVICES CROSSING EXCAVATION GREATER THAN 4'-0" WIDE AT ANY ANGLE



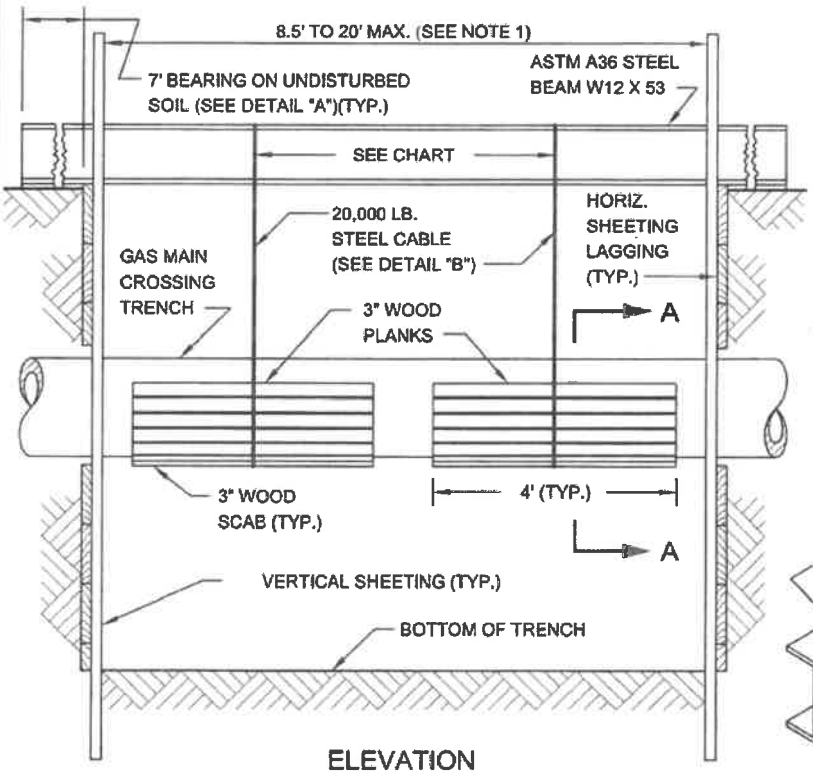


CABLE SUPPORT		TIMBER SUPPORT	
MAIN TYPE	SPACING	MAIN SIZE	TIMBER SIZE
CAST IRON	4' O.C. MAX.	UP TO 6"	6" X 6"
STEEL	10' O.C. MAX.	8" TO 10"	8" X 8"
PLASTIC	10' O.C. MAX.	12" TO 16"	10" X 10"

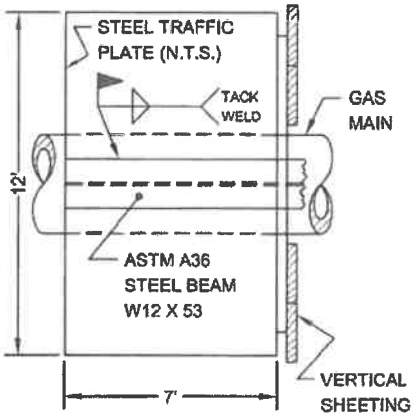
REVISED OCT. 2004 - L. ADRIEN
REVISED JUNE 1998 - J. WONG / W. PATACNOP. MOY

GAS COST SHARING WORK (SKETCH NO. 1A)

SUPPORT REQUIREMENTS FOR GAS MAINS OVER 16" DIAMETER UP TO AND INCLUDING 48" DIAMETER CROSSING EXCAVATION AT ANY ANGLE

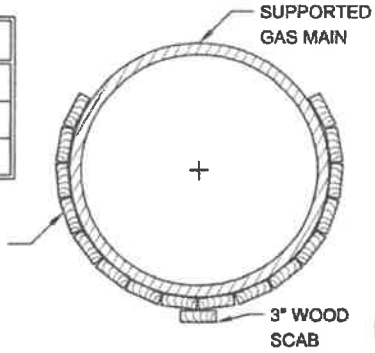


ELEVATION

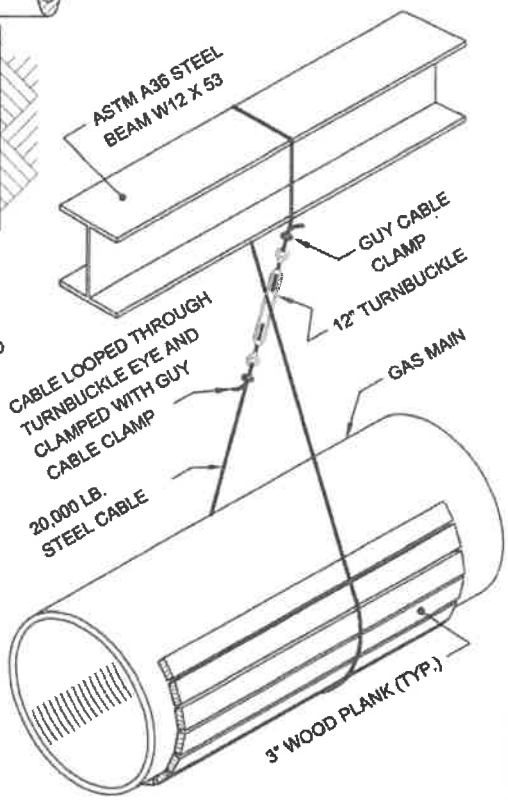


DETAIL "A"

CABLE SUPPORT	
MAIN TYPE	SPACING
CAST IRON	4' O.C. MAX.
STEEL	10' O.C. MAX.



SECTION A-A



DETAIL "B"

NOTES:

(1) NO SUPPORT IS REQUIRED FOR GAS MAINS OVER 16" DIA. UP TO AND INCLUDING 48" DIA. CROSSING TRENCHES LESS THAN 8.5' WIDE.

(2) UNDERMINE A MAXIMUM OF 8.5 L.F. OF CAST IRON GAS MAIN AT A TIME.

(3) SET STEEL CABLE OVER 3" WOOD PROTECTIVE PLANKS AND PLACE AN ADDITIONAL 3" SCAB ON THE BOTTOM OF THE GAS MAIN.

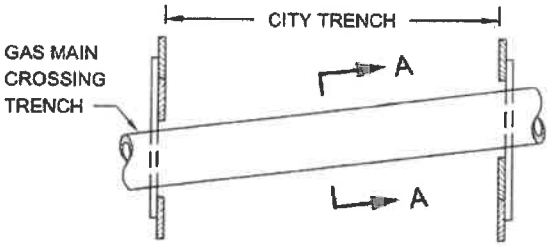
(4) ADJUST STEEL CABLE UNTIL DEAD WEIGHT OF THE UNDERMINED GAS MAIN HAS BEEN TAKEN UP BY THE OVERHEAD STEEL BEAM SUPPORT.

(5) ALL SUPPORTS AND STEEL CABLES CAN BE REOMVED ONLY AFTER THE REQUIRED BACKFILL (AROUND AND BELOW GAS MAIN) HAS BEEN COMPACTED IN ACCORDANCE WITH NEW YORK CITY STANDARDS AND AT THE DIRECTIONS OF THE ENGINEER.

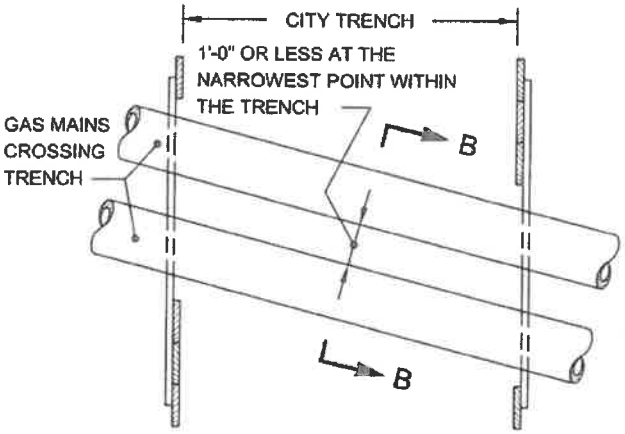
REVISED OCT. 2004 - J. ADRIEN
REVISED JUNE 1998 - J. WONG / W. PATALANOP. MOY

GAS COST SHARING WORK (SKETCH NO. 2)

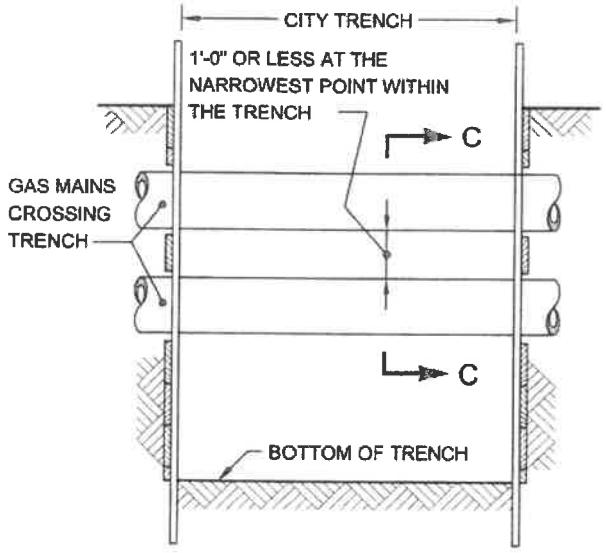
TYPICAL METHODS OF MEASUREMENT FOR GAS CROSSINGS



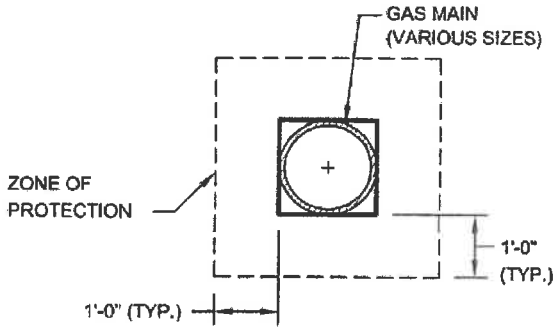
SINGLE FACILITY CROSSING



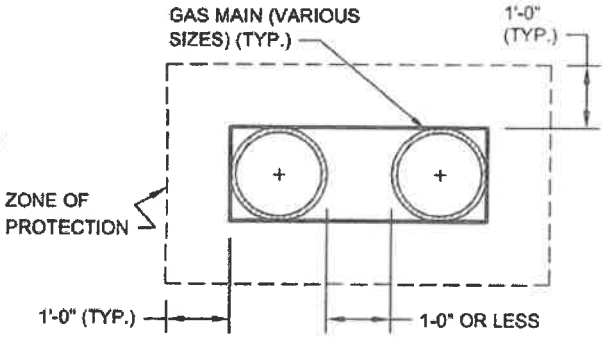
MULTIPLE FACILITIES
(GAS MAINS AT SAME ELEVATION)



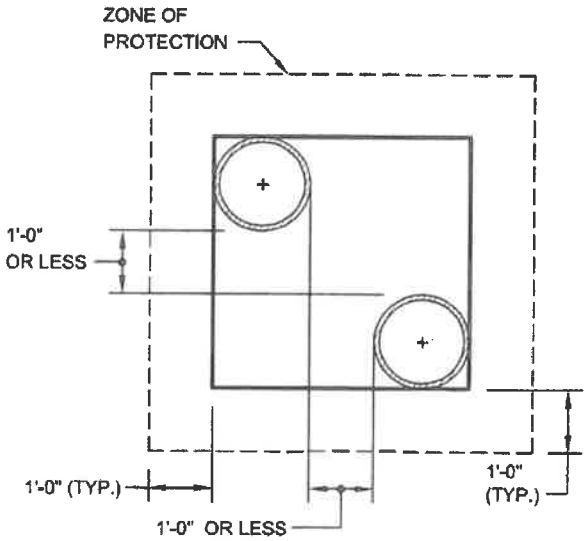
MULTIPLE FACILITIES
(ONE CROSSING AT DIFFERENT ELEVATIONS)



SECTION A-A



SECTION B-B



SECTION C-C

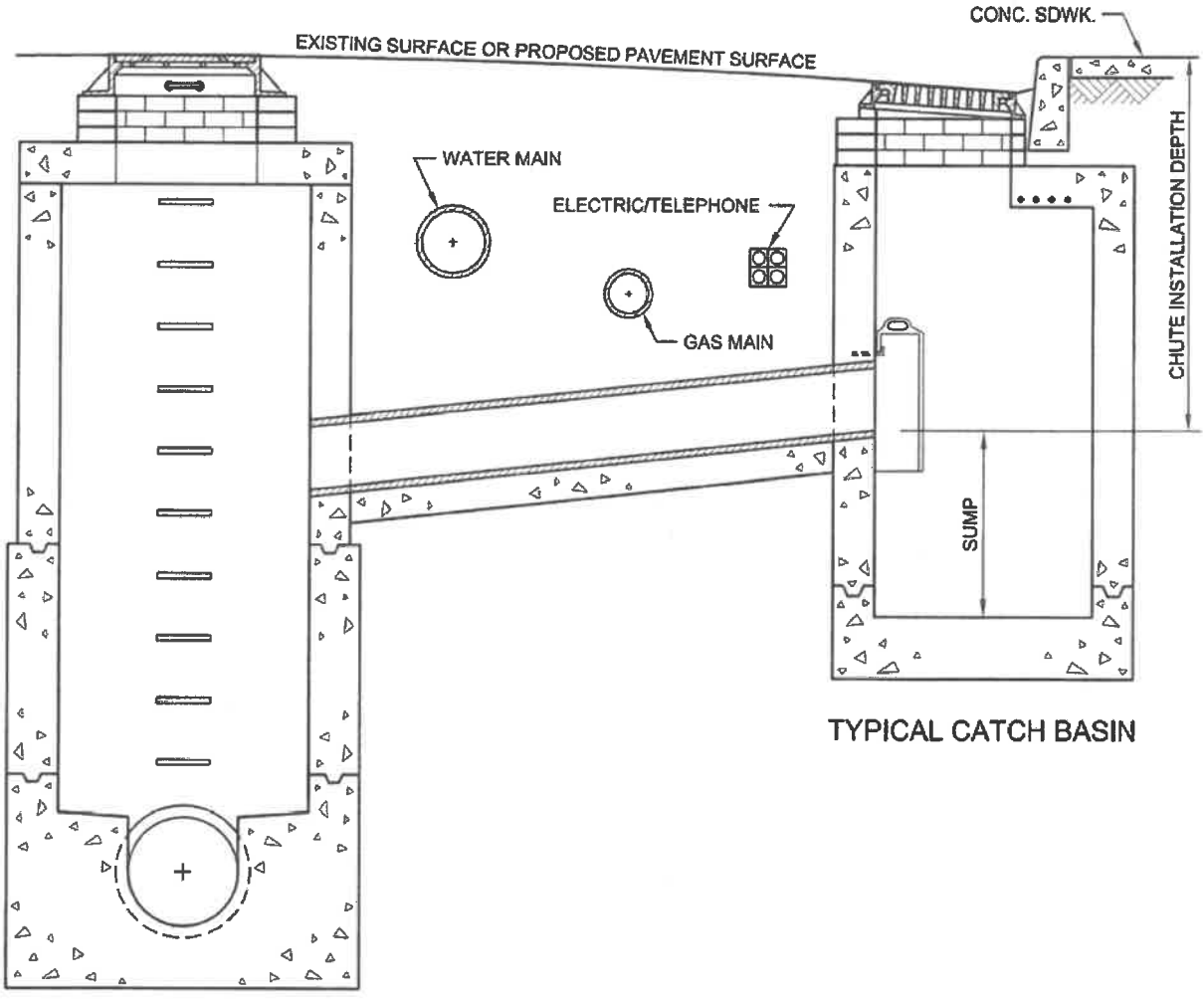
NOTE:

GAS MAINS MAY OR MAY NOT BE PARALLEL TO EACH OTHER.

REVISED SEPT. 2004 - I. ADRIEN
REVISED SEPT. 2004 - J. WONG/W. PATALANO/P. MOY

GAS COST SHARING WORK (SKETCH NO. 3)

UTILITY CROSSINGS DURING CATCH BASIN CHUTE CONNECTION PIPE INSTALLATION



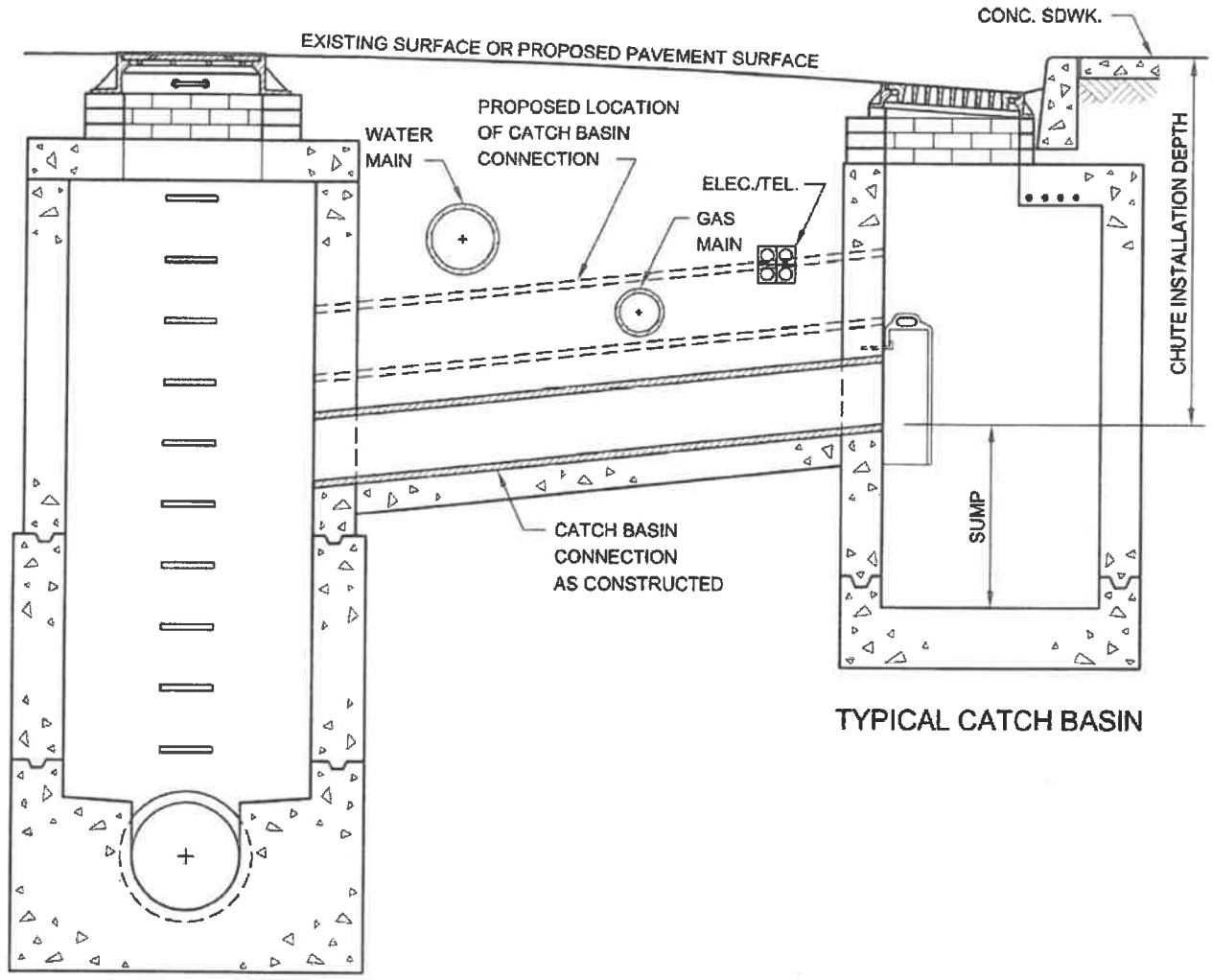
TYPICAL CATCH BASIN

TYPICAL SEWER MANHOLE

REVISED OCT. 2004 - L. ADRIEN
REVISED OCT. 1998 - J. WONG/W. PATALANO/P. MOY

GAS COST SHARING WORK (SKETCH NO. 4)

UTILITY CROSSINGS DURING CATCH BASIN CHUTE CONNECTION PIPE INSTALLATION (EXTRA DEPTH)



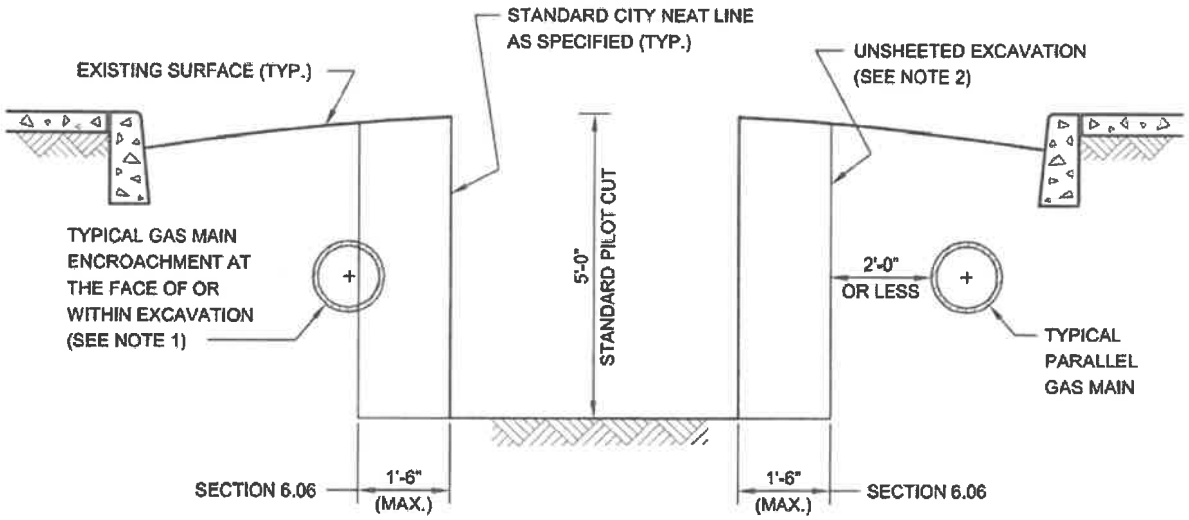
TYPICAL CATCH BASIN

TYPICAL SEWER MANHOLE

REVISED OCT. 2004 - J. ADRIEN
REVISED OCT. 1998 - J. WONG/W. PATALANO/P. MOY

GAS COST SHARING WORK (SKETCH NO. 5)

GAS MAIN ENCROACHMENT ON AND/OR PARALLEL TO EXCAVATION OF UNSHEETED TRENCH



NOTES:

(1) GAS MAIN LOCATED AS SHOWN MAY HAVE TO BE REMOVED BY THE FACILITY OPERATOR PRIOR TO THE START OF CITY EXCAVATION, OTHERWISE, THE CONTRACTOR WILL BE PAID UNDER SECTION 6.06 FOR THE SAID WORK. IF GAS MAIN IS ABANDONED THEN SECTION 6.03 SHALL APPLY.

(2) EIGHTEEN (18) INCHES FROM STANDARD NEAT LINE IS THE MAXIMUM ALLOWABLE WIDTH OF AREA THAT MAY BE DISTURBED OR EXCAVATED DURING INSTALLATION OF CERTAIN TYPES OF SHEETING SYSTEMS THAT MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS OF THE DEPARTMENT OF DESIGN AND CONSTRUCTION OF THE CITY OF NEW YORK.

REVISED OCT. 2004 - I. ADRIEN
REVISED OCT. 1998 - J. WONG/W. PATALANO/P. MOY

V - PRELIMINARY GAS WORK TO BE PERFORMED BY FACILITY OPERATOR

APPLICABLE TO ALL GAS DRAWINGS:

- ALL RELOCATION WORK SHOWN IN THIS SECTION IS TO BE PERFORMED BY FACILITY OPERATOR.
- ALL SUPPORT AND PROTECTION WORK IS TO BE PERFORMED BY CITY CONTRACTOR.
- NO CAPITAL WORK IS ANTICIAPTED AT THIS TIME.
- IF ADDITIONAL INFORMATION IS NEEDED REGARDING THE FACILITY OPERATOR RELOCATION WORK, THE CONTRACTOR IS ADVISED TO CONTACT THE GAS COMPANY REPRESENTATIVE:

THERESA KONG
CONSOLIDATED EDISON
4 IRVING PL., 12TH FLOOR
NEW YORK, NY 10003
TEL.: 212-460-4834

(NO TEXT IN THIS AREA, TURN PAGE)

VI - LISTING OF APPROXIMATE LOCATIONS OF EP-7 BID ITEMS QUANTITIES

(NO TEXT IN THIS AREA, TURN PAGE)

SCOPE OF WORK
SUPPORT AND PROTECTION
FOR CONTRACT NUMBER HED-564

The City of New York Department of Design and Construction is planning to install sewers and/or water mains and all appurtenances in various locations in The City of New York along with all work incidental thereto.

6.01.9 - Gas Main Crossing Water Main Up To 20" In Diameter (Ea.)

1 in 25' S/N/C City Island Traffic Relief Road at STA. 1+40
1 in 23' S/N/C City Island Traffic Relief Road at STA. 1+70
1 in 12' S/N/C City Island Traffic Relief Road at STA. 2+40
1 in N/E/C City Island Ave. & City Island Bridge Road

6.03 - Removal of Abandoned Gas Facilities. All Sizes (L.F)

40 in Various Locations as Required.

6.05 - Adjust Hardware to Grade by Resetting (Road Reconstruction) (Ea.)

5 in Various Locations as Required.

6.06 - Special Care Excavation and Backfilling (C.Y.)

50 CY in Various Locations As Required, Including but Not Limited to All Gas Services Crossing Unsheeted Water Main Trenches.

6.07 - Test Pits For Gas Facilities (C.Y.)

30 in Various Locations as Required.

(NO TEXT THIS PAGE)

HAZ - PAGES

SPECIFICATIONS FOR HANDLING, TRANSPORTATION AND DISPOSAL OF NONHAZARDOUS AND POTENTIALLY HAZARDOUS CONTAMINATED MATERIALS

NOTICE

THE PAGES CONTAINED IN THIS SECTION ARE ISSUED FOR THE PURPOSE OF SPECIFYING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND HEREBY MADE PART OF SAID CONTRACT DOCUMENTS.

(NO TEXT ON THIS PAGE)

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

SPECIFICATIONS FOR HANDLING, TRANSPORTATION AND DISPOSAL OF NON-HAZARDOUS AND POTENTIALLY HAZARDOUS CONTAMINATED MATERIALS

20" SUB-AQUEOUS WATER MAINS
TO CITY ISLAND

BOROUGH OF BRONX
CITY OF NEW YORK

Capital Project ID: HED564

Prepared By:

NYC DDC Department of Design and Construction
30-30 Thomson Avenue, 3rd Floor
Long Island City, New York 11101

November 28, 2016

Table of Contents

ITEM 8.01 C1 HANDLING, TRANSPORTING, & DISPOSAL OF NON-HAZARDOUS CONTAMINATED SOILS ..... HAZ- 1

ITEM 8.01 C2 SAMPLING AND TESTING OF CONTAMINATED/ POTENTIALLY HAZARDOUS SOIL FOR DISPOSAL PARAMETERS ..... HAZ- 7

ITEM 8.01 H HANDLING, TRANSPORTING, AND DISPOSAL OF HAZARDOUS SOILS ..... HAZ- 9

ITEM 8.01 S HEALTH AND SAFETY ..... HAZ- 14

ITEM 8.01 W1 REMOVAL, TREATMENT, AND DISCHARGE/DISPOSAL OF CONTAMINATED WATER ..... HAZ- 19

ITEM 8.01 W2 SAMPLING AND TESTING OF CONTAMINATED WATER ..... HAZ- 25

ATTACHMENT 1: NYCDEP LIMITATIONS FOR DISCHARGE TO STORM, SANITARY/COMBINED SEWER ..... HAZ- 28

ATTACHMENT 2: APPLICABLE REGULATIONS ..... HAZ- 31

ATTACHMENT 3: DEFINITIONS ..... HAZ- 34

ATTACHMENT 4: PHASE II SUBSURFACE CORRIDOR INVESTIGATION REPORT ..... HAZ- 36

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

ITEM 8.01 C1 HANDLING, TRANSPORTING, & DISPOSAL OF NON-HAZARDOUS CONTAMINATED SOILS

8.01 C1.1 WORK TO INCLUDE

General: This work shall consist of the handling, transportation and disposal of non-hazardous contaminated soils. The materials covered by this specification are soils that are contaminated with petroleum or chemical products but cannot be classified as hazardous waste. For the purpose of this specification, soil shall be defined as any material excavated below the pavement and base for pavement.

Non-hazardous contaminated soils are defined as soils exhibiting one or more of the following characteristics:

- Elevated Photo-Ionization Detector (PID) readings, subsequently confirmed by lab analysis
- Visual evidence of contamination
- Petroleum and/or chemical odors
- Soils that have been documented as contaminated in previous environmental reports

Non-hazardous contaminated soils must be stockpiled at an off-site approved location or secured on-site by the Contractor, meeting all required Federal, State and Local stipulations. Sampling and laboratory analysis must be conducted to determine if the soils are hazardous, unless the alternative procedure as defined under subsection 8.01 C1.1 A.5 has been agreed upon by treatment facilities. Contaminated soils determined to be non-hazardous shall be handled in accordance with the specifications herein for Item 8.01 C1. Contaminated soils determined to be hazardous shall be handled in accordance with the specifications for Item 8.01 H – Handling, Transporting and Disposal of Hazardous Soils.

The Contractor shall retain the services of an independent Environmental Consultant, as specified under Item 8.01 S – Health and Safety, to oversee the work required under this Item.

Non-hazardous soils shall be delivered to the disposal or treatment facility within thirty (30) calendar days after excavation.

The Contractor shall conduct sampling and analysis of the impacted soils as specified under Item 8.01 C2 – Sampling and Testing of Contaminated/Potentially Hazardous Soils for Disposal Parameters. The laboratory results shall be forwarded to DDC Program Management, Office of Environmental and Geotechnical Services (OEGS) for review to determine if the soils will be handled and disposed of as contaminated regulated soils or hazardous waste. No other soils shall be sampled or tested without the DDC's approval or direction.

The Contractor shall ensure that all operations associated with the handling, sampling, loading, transportation, and disposal of non-hazardous contaminated soils are in compliance with all applicable Federal, State, and City statutes and regulations.

The Contractor shall document the excavation, handling, transportation and disposal of non-hazardous contaminated soils. The Contractor shall supply all equipment, material and labor required to conduct the specified work of this Item.

A. Material Handling Plan: Within forty-five (45) calendar days after award of Contract, the Contractor shall submit to the Program Management, OEGS for review, a Material Handling Plan (MHP). The MHP must be approved by the Program Management, OEGS, prior to the Contractor's commencement of work. The MHP shall, at a minimum, consist of:

1. The Contractor's procedures for identifying non-hazardous contaminated soils during excavation, including the specific model and manufacturer of intended organic vapor monitoring equipment and calibration procedures to be used. It should also include the training and experience of the personnel who will operate the equipment.
2. The Contractor's procedures for safely handling non-hazardous contaminated soils. The procedures must include personnel safety and health as well as environmental protection considerations.
3. Name, address, New York State Department of Health's (DOH) Environmental Laboratories Accreditation Program (ELAP) status and telephone number of the proposed laboratory for analysis of representative soil samples. The ELAP for the intended analysis must approve the laboratory.
4. Identification of the Contractor's proposed waste transporter(s). This information shall include:
    a. Name and Waste Transporter Permit Number
    b. Address
    c. Name of responsible contact for the hauler
    d. Telephone number for the contact
    e. Any and all necessary permit authorizations for each type of waste transported
    f. Previous experience in performing the type of work specified herein
5. All staging/stockpiling areas (if stockpiling areas are intended and available), or alternate procedures that will be used. Alternate procedures may include, but are not limited to, agreements from the intended disposal or treatment facilities to accept boring data and/or analytical data previously obtained during the site characterization so that materials may be directly loaded into vehicles for shipment to the disposal facility.
6. A backup facility should the staging/stockpile areas become unavailable, insufficient in area or not be present by some other unforeseen difficulty.
7. Identification of the Contractor's two proposed Treatment Storage or Disposal (TSD) facilities for non-hazardous contaminated soils (primary and back-up) for final disposal of the soils. The primary TSD shall be an approved soil recycling/treatment facility. The backup facility may be a recycling/treatment facility or a New York State Department of Environmental Conservation (DEC) approved lined landfill or other facility approved by DEC to accept this material. The information required for each facility shall include:
    a. Facility name and the State identification number
        (1) Facility location
        (2) Name of responsible contact for the facility
        (3) Telephone number for contact
        (4) Signed letter of agreement to accept waste as specified in this contract
        (5) Unit of measure utilized at facility for costing purposes
    b. A listing of all permits, licenses, letters of approval, and other authorizations to operate, which are currently held and valid for the proposed facility.

c. A listing of all permits, licenses, letters of approval, and other authorizations to operate which have been applied for by the proposed facility but not yet granted or issued.

d. The Contractor shall specify and describe the disposal/containment unit(s) that the proposed facility will use to manage the waste. The Contractor shall identify the capacity available in the units and the capacity reserved for the subject waste.

e. The Contractor shall provide the date of the proposed facility's last compliance inspection.

f. A list of all active (unresolved) compliance orders (or agreements), enforcement notices, or notices of violations issued to the proposed facility shall be provided. The source and nature of the cause of violation shall be stated, if known.

8. Description of all sampling and field/laboratory analyses that will be needed to obtain disposal facility approval.

8.01 C1.2 MATERIALS

A. Containers shall be as required in the United State Department of Transportation (DOT) regulations.

B. Polyethylene to be placed under (20 mil. thickness minimum) and over (10 mil. thickness minimum) soil piles.

C. The Contractor shall assure that the waste hauler's appropriate choice of vehicles and operating practices shall prevent spillage or leakage of contaminated material from occurring en route.

D. The Contractor shall provide, install and maintain any temporary loading facilities on site as required until completion of material handling activities. The location and design of any facilities shall be included in the MHP and be approved by the Program Management, OEGS.

8.01 C1.3 CONSTRUCTION DETAILS

A. Material Handling

1. Immediately after excavation of non-hazardous contaminated soil the Contractor shall:

   a. Load material directly onto trucks/tankers/roll offs for disposal off site; or

   b. If interim stockpiling is required, place on a minimum of 20 mil. or equivalent plastic ground cloth and cover by minimum of 10 mil. polyethylene sheeting or equivalent to protect against leaching or runoff of contaminants into groundwater or stormwater. Weight or secure the sheeting by appropriate means and seal seams as approved by the DDC to prevent tearing or removal by weather. Grade surrounding surface to provide for positive drainage away from pile. Stockpile shall not exceed 100 cubic yards.

2. Institute appropriate procedures and security measures to ensure the protection of site personnel and the public from contaminated materials as described in the approved MHP and Item 8.01 S - Health and Safety.

3. Any soil encountered that appears to contain unknown contaminants (based on visual, odor, or other observation), or that vary substantially from the material originally identified must be segregated in stockpiles and the independent Environmental

Consultant promptly notified. Construct stockpiles to the same requirements as stated in subsection A.1.b above.

4. Provide any dewatering that is necessary to complete the work. Contaminated water shall be disposed of in accordance with Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

5. Provide and operate field organic vapor test equipment, a PID or a flame ionization detector (FID), to detect general organic vapor levels at intervals of approximately fifty (50) cubic yards of soil excavated, when visual or odor observations indicate the material may substantially differ from the soil previously excavated and/or as directed by the independent Environmental Consultant.

B. Off-Site Transportation to Disposal or Treatment Facility

1. General

a. The Contractor shall furnish all labor, equipment, supplies and incidental costs required to transport contaminated material from the work area to the off-site disposal or treatment facility, and any other items and services required for transporting contaminated material for disposal at an off-site facility.

b. The Contractor shall submit the name and location of the facility where an off-site scale is located. The Contractor shall also submit a plan to the DDC for review outlining procedures on controlling trucks leaving the work site and en-route to the off-site scale. The Contractor shall be responsible for tracking all material/vehicles from the site to the off-site scale.

c. The Contractor shall provide to the DDC certified tare and gross weight slips for each load received at the accepted facility which shall be attached to each returned manifest.

d. The Contractor shall coordinate the schedule for truck arrival and material deliveries at the job site to meet the approved project schedule.

e. The Contractor shall inspect all vehicles leaving the project site to ensure that contaminated soils adhering to the wheels or undercarriage are removed prior to the vehicle leaving the site.

f. The Contractor shall obtain letters of commitment from the waste haulers and the treatment, disposal or recovery facility to haul and accept shipments. The letter shall indicate agreement to handle and accept the specified estimated quantities and types of material during the time period specified in the project schedule and any time extension as deemed necessary.

g. **The Program Management, OEGS shall review and approve waste profiles before transportation to the TSD facility.**

2. Hauling

a. The Contractor shall coordinate manifesting, placarding of shipments, and vehicle decontamination. All quantities shall also be measured and recorded upon arrival at the disposal or treatment facility. If any deviation between the two records occurs, the matter is to be reported immediately to the DDC and to be resolved by the Contractor to the satisfaction of the DDC.

b. The Contractor shall be held responsible, at its own cost for any and all actions necessary to remedy situations involving material spilled in transit or mud and dust tracked off-site.

c. The Contractor shall ensure that trucks are protected against contamination by properly covering and lining them with compatible material (such as polyethylene) or by decontaminating them prior to and between acceptances of loads.

d. The Contractor shall be responsible for inspecting the access routes for road conditions, overhead clearance, and weight restrictions.

e. The Contractor shall only use the transporter(s) identified in the MHP for the performance of work. Any use of substitute or additional transporters must have previous written approval from the Program Management, OEGS at no additional cost to the City.

f. The Contractor shall develop, document, and implement a policy for accident prevention.

g. The Contractor shall not combine contaminated materials from other projects with material from this project.

h. No material shall be transported until approved by the DDC.

3. Off-Site Disposal

a. The Contractor shall use only the facility(ies) identified in the MPH for the performance of the work. Substitutions or additions shall not be permitted without prior written approval from the Program Management, OEGS, and if approved shall be at no extra cost to the City.

b. The Contractor shall be responsible for acceptance of the materials at an approved facility, for ensuring that the facility is properly permitted to accept the stated materials, and that the facility provides the stated treatment and/or disposal services.

c. The DDC reserves the right to contact and visit the disposal or treatment facility and regulatory agencies to verify the agreement to accept the stated materials and to verify any other information provided.

d. In the event that the identified and approved facility ceases to accept the stated materials or the facility ceases operations, it is the Contractor's responsibility to locate an alternate approved and permitted facility(ies) for accepting materials. The alternate facility(ies) must be approved in writing by the DDC in the same manner and with the same requirements as for the original facility(ies). This shall be done at no extra cost or delay to the City.

e. The Contractor shall obtain manifest forms, and complete the shipment manifest records required by the appropriate regulatory agencies for verifying the material and quantity of each load in unit of volume and weight. Copies of each manifest shall be submitted to the DDC within four (4) business days following shipment, and within three (3) business days after notification of receipt of the facility. Any manifest discrepancies shall be reported immediately to the DDC and be resolved by the Contractor to the satisfaction of the DDC.

4. Equipment and Vehicle Decontamination

a. The Contractor shall design and construct a portable decontamination station to be

used to decontaminate equipment and vehicles exiting from the exclusion zone. The cost for this work will be paid under Item 8.01 S - Health and Safety.

b. Water generated during the decontamination process shall be disposed of in accordance with Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

8.01 C1.4 METHOD OF MEASUREMENT

Quantities for non-hazardous contaminated soils shall be measured in tons. The tonnage will be determined by off-site truck scales, as per Subsection 8.01 C1.3.B1, that are capable of generating load tickets.

8.01 C1.5 PRICE TO COVER

A. The unit bid price bid per ton for Item 8.01 C1 shall include the cost of furnishing all labor, materials, equipment, plan, and insurance for excavation, handling, transportation, disposal, documentation, fees, permits, loading, stockpiling, hauling, and any other incidentals necessary to complete all the work as specified herein for handling, transporting, and disposal of non-hazardous contaminated soil.

B. Final disposal of hazardous soil shall be paid for under Item 8.01 H – Handling, Transporting and Disposal of Hazardous Soils. Disposal of decontamination water shall be paid for under Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

C. Backfill will be paid for under its respective item as specified in the contract document.

D. The independent Environmental Consultant shall be paid under Item 8.01 S – Health and Safety.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 C1	Handling, Transporting, and Disposal of Non-Hazardous Contaminated Soil	Tons

ITEM 8.01 C2 SAMPLING AND TESTING OF CONTAMINATED/ POTENTIALLY HAZARDOUS SOIL FOR DISPOSAL PARAMETERS

8.01 C2.1 WORK TO INCLUDE

A. Description

The work shall consist of collecting and analyzing representative soil samples for parameters typically requested by the disposal facilities.

B. Sampling and Laboratory Analysis

1. At least thirty (30) days prior to the commencement of work, the Contractor's independent Environmental Consultant must submit a Soil Sampling Plan/Field Sampling Plan (SSP/FSP) to the Program Management, Office of Environmental and Geotechnical Services (OEGS) for review and approval. The plan shall include the name, address, DOH's ELAP status, and telephone numbers of the proposed laboratory. The plan shall also include training and experience of the personnel who will collect the samples.

2. The Contractor shall sample and analyze representative samples of the contaminated/potentially hazardous soils. For stockpiled soils, the Contractor shall collect and analyze one (1) composite sample per 500 cubic yards or fraction thereof. Each composite sample shall consist of a minimum of five (5) grab samples collected from greater than two (2) feet below the soil surface. For drummed soil, the Contractor shall collect one (1) composite sample per (ten) 10 drums or fraction thereof. Each composite sample shall consist of a grab sample from each of the ten (10) drums or fraction thereof. Each composite sample shall be analyzed for Resource Conservation and Recovery Act (RCRA) hazardous waste characteristics (Ignitability, Reactivity, Corrosivity), Full Toxicity Characteristic Leaching Procedure (TCLP) (including RCRA metals, volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), pesticides, herbicides), Total Petroleum Hydrocarbons (TPH) and Polychlorinated Biphenyls (PCBs). All samples collected should be analyzed on a five (5) calendar days turn around time and analytical results must be submitted to Program Management, OEGS upon receipt of the analytical results.

3. All sampling shall be conducted by a person trained in sampling protocols using standard accepted practices for obtaining representative samples.

4. The Contractor must also contact the disposal facility where the waste will be sent for permanent disposal, and arrange to collect any additional samples required by the facility. The cost associated with additional sampling and testing shall be included in the bid price of this Item.

5. The quality of the data from the sampling program is the Contractor's responsibility. The Contractor must furnish all qualified personnel, equipment and instruments necessary to carry out the sampling. Unless directed otherwise, all sampling procedures must follow the DEC sampling guidelines and protocols.

6. All sample containers shall be marked and identified with legible sample labels which shall indicate the project name, sample location and/or container, the sample number, the date and time of sampling, preservatives utilized and other information that may be useful in determining the character of the sample. Chain-of-custody shall be tracked from laboratory issuance of sample containers through laboratory receipt of the samples.

7. The Contractor shall maintain a bound sample logbook. The Contractor shall provide DDC access to it at all times and shall turn it over to the DDC in good condition at the completion of the work. The following information, as a minimum shall be recorded to the log:

    1. Sample identification number
    2. Sample location
    3. Field observation
    4. Sample type
    5. Analyses
    6. Date/time of collection
    7. Collector's name
    8. Sample procedures and equipment utilized
    9. Date sent to laboratory and name of laboratory

8. The City reserves the right to direct the Contractor to conduct alternative sampling in lieu of the parameters described in subsection B2, if the situation warrants. The substitute sampling parameters shall be of equal or lesser monetary value than those described in subsection B2, as determined by industry laboratory pricing standards.

9. Only dedicated sampling equipment may be used to collect these samples. All equipment involved in field sampling must be decontaminated before being brought to the sampling location, and must be properly disposed after use.

10. Soils exceeding any of the hazardous characteristic criteria meet the legal definition of hazardous soils (rather than non-hazardous contaminated soils) and shall be transported or disposed of under Item 8.01 H – Handling, Transporting and Disposal of Hazardous Soils. All analyses must be done by a laboratory that has received approval from the ELAP for the methods to be used. The Contractor must specify the laboratory in the MHP.

8.01 C2.2 METHOD OF MEASUREMENT

Quantities for samples shall be measured as the number of sets of samples that are tested. A set shall be defined as one (1) composite sample analyzed for the full range of parameters as specified in subsection B2.

8.01 C2.3 PRICE TO COVER

The unit price bid per set for Item 8.01 C2 shall include the cost of furnishing all labor, materials, equipment, plan, and insurance necessary for sampling, handling, transporting, testing, documentation, fees, permits and any other incidentals necessary to complete the work as specified herein for sampling and testing of contaminated/potentially hazardous soil.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 C2	Sampling and Testing of Contaminated/ Potentially Hazardous Soil for Disposal Parameters	Set

ITEM 8.01 H HANDLING, TRANSPORTING, AND DISPOSAL OF HAZARDOUS SOILS

8.01 H.1 WORK TO INCLUDE

General: This work shall consist of the handling, transportation and disposal of soils or materials that are listed as hazardous wastes or exhibit any of the characteristics of a hazardous waste, namely ignitability, corrosivity, reactivity, and toxicity, as defined in 6 NYCRR Part 371, Section 371.3 and 40 CFR Section 261. For the purpose of this specification, soils shall be defined as any materials excavated below the pavement and base for pavement.

Contaminated soils determined to be hazardous under Item 8.01 C2 shall be handled, transported, and disposed of under Item 8.01 H in accordance with the specifications herein.

The independent Environmental Consultant retained by the Contractor, as specified under Item 8.01 S – Health and Safety, shall conduct sampling and analysis of above soils to determine which soils are hazardous.

All work under Item 8.01 H shall be performed under the direct supervision of the Contractor's Environmental Consultant, as approved by the Program Management, Office of Environmental and Geotechnical Services (OEGS).

The Contractor shall ensure that all operations associated with the handling, sampling, loading, transportation, and disposal of hazardous materials are in compliance with the applicable Federal, State, and Local statutes and regulations.

The Contractor shall document the excavation, handling, sampling, and testing, transportation and disposal of hazardous soils. The City shall be listed in the disposal documents as the waste generator.

The Contractor shall supply all equipment, material and labor required to conduct the specified work of this section.

The Contractor shall ensure that all operations associated with the handling, sampling, loading, transportation and disposal of hazardous soils are conducted in a manner to protect site personnel, the public and the environment, in accordance with all applicable Federal, State, and Local laws and regulations.

The Contractor shall decontaminate all equipment prior to its removal from the exclusion zone and/or following contact with hazardous materials, as detailed in Item 8.01 S - Health and Safety. Water generated during the decontamination process shall be disposed of under Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

A. Material Handling Plan: Within forty-five (45) calendar days after award of Contract, the Contractor shall submit to the Program Management, OEGS for review, a Material Handling Plan (MHP). The MHP must be approved by the Program Management, OEGS, prior to the Contractor's commencement of work. The MHP shall, at a minimum, consist of:

   1. The Contractor's procedures for identifying contaminated/potentially hazardous soils during excavation, including instrumentation and calibration procedures to be used.

   2. The Contractor's procedures for safely handling hazardous soils or soils which have not yet been tested but are believed to be potentially hazardous.

   3. Identification of the Contractor's proposed waste transporter(s). This information shall include:

      a. Name and waste transporter permit number

      b. Address

c. Name of responsible contact for the hauler

d. Telephone number for the contact

e. Any and all necessary permit authorizations for each type of waste transported

f. Previous experience in performing the type of work specified herein

4. All staging/stockpiling areas (if stockpiling areas are intended and available), or alternate procedures that will be used. Alternate procedures could include, but are not limited to, agreements from the intended disposal or treatment facilities to accept boring data and/or analytical data previously obtained during the site characterization so that materials may be directly loaded into vehicles for shipment to the disposal facility or the use of off-site stockpiling locations approved by the DEC.

5. A backup facility, should the staging/stockpile areas become unavailable, insufficient in area or not be present by some other unforeseen difficulty.

6. Identification of the Contractor's two proposed United State Environmental Protection Agency (EPA) or DEC approved RCRA TSD facilities for hazardous soils.

7. The Contractor shall submit the following information prior to any transportation of soils regarding the temporary and final off-site TSD or facilities where it is proposing to take hazardous soils. The expense of furnishing all information will be included in the Contractor's bid price:

   a. General Information

      (1) Facility name and the EPA identification number

      (2) Facility location

      (3) Name of responsible contact for the facility

      (4) Telephone number for contact

      (5) Signed letter of agreement to accept waste as specified in this contract

      (6) Signed letter of agreement with a TSD for disposal of waste that may not be land-disposed

      (7) Unit of measure utilized at each facility for costing purposes

   b. A listing of all permits, licenses, letters of approval, and other authorizations to operate, which are currently held and valid for the proposed facility as they pertain to receipt and management of wastes derived from this Contract.

   c. A listing of all permits, licenses, letters of approval, and other authorizations to operate which have been applied for by the proposed facility.

   d. The Contractor shall specify and describe the disposal/containment unit(s) that the proposed facility will use to manage the waste. The Contractor shall identify the capacity available in the units and the capacity reserved for the subject waste.

   e. The Contractor shall provide the date of the proposed facility(ies) last compliance inspection under RCRA.

   f. A list of all active (unresolved) compliance orders, agreements, enforcement notices or notices of violations issued to the proposed facility shall be approved. The source and nature of the cause of violation shall be stated, if known.

8. Description of all sampling and analyses that will be needed to obtain disposal facility approval.

8.01 H.2 MATERIALS

A. Containers shall be watertight as required in the DOT regulations and must meet all applicable regulations including but not limited to those in Attachment 2.

B. Polyethylene (20 mil. thickness minimum) to be placed under and (10 mil. thickness minimum) over soil piles. If soils are placed in drums, polyethylene must be placed over the drums.

8.01 H1.3 CONSTRUCTION DETAILS

A. Material Handling

1. The Contractor shall institute procedures to protect site personnel and the public from the non-hazardous and hazardous materials as described in Section 8.01 S - Health and Safety.

2. The Contractor shall handle hazardous soil as approved in the MHP.

3. Stockpiled materials at the temporary TSD facility shall be handled according to the facility requirements but at a minimum: shall be drummed or placed on and covered with polyethylene to protect against erosion and leaching into surrounding soils, the stockpile area shall be graded for positive drainage away from the pile, and shall be labeled while being held for sampling prior to permanent disposal.

4. Provide any dewatering that is necessary to complete the work. Water shall be disposed of in accordance with Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

B. Off-Site Transportation and Disposal

1. The Contractor shall furnish all labor, equipment and supplies required to transport hazardous materials from the work area to the off-site TSD facility(ies) and to acquire any other items and services required for transporting hazardous materials for storage and/or disposal at an approved off-site facility.

2. Weight Measurement

a. The Contractor shall submit the name and location of the facility where an off-site scale is located. The Contractor shall also submit a plan to the DDC for review outlining procedures on controlling trucks leaving the work site and on-route to the off-site scale. The Contractor shall be responsible for tracking all materials/vehicles from the site to the off-site scale.

b. The Contractor shall provide to the DDC certified tare and gross weight slips for each load received at the accepted facility which shall be attached to each returned manifest.

3. General

a. Manifests: The Contractor shall organize and maintain the material shipment records/manifests required by law.

b. The Contractor shall coordinate the schedule for truck arrival and material deliveries at the job site to meet the approved project schedule. The schedule shall be compatible with the availability of equipment and personnel for material handling at the job site.

c. The Contractor shall inspect all vehicles leaving the project site to ensure that hazardous soils adhering to the wheels or under carriage are removed prior to the vehicle leaving the site.

d. The Contractor shall obtain letters of commitment from the waste haulers and the TSD facility to haul and accept shipments. The letter shall indicate agreement to handle and accept the specified estimated quantities and types of material during the time period specified in the project schedule and any time extension as deemed as necessary.

4. Hauling

a. The Contractor shall not deliver waste to any facility other than the TSD facility(ies) listed on the shipping manifest.

b. The Contractor shall coordinate manifesting, placarding, of shipments, and vehicle decontamination. All quantities shall also be measured and recorded upon arrival at the TSD facility. If any deviation between the two records occurs, the matter is to be reported immediately to the DDC and to be resolved by the Contractor to the satisfaction of the DDC.

c. The Contractor shall be held responsible, at its own expense, for any and all actions necessary to remedy situations involving material spilled in transit or mud and dust tracked off-site.

d. The Contractor shall ensure that trucks are protected against contamination by properly covering and lining them with compatible material (such as polyethylene) or by decontaminating them prior to any use other than hauling hazardous materials.

e. The Contractor shall be responsible for inspecting the access routes for road conditions, overhead clearance, and weight restrictions.

f. The Contractor shall only use the transporter(s) identified in the MHP for the performance of work. Only a transporter with a current Part 364 Waste Transporter Permit from the DEC may transport this material. Any use of substitute or additional transporters must have previous written approval from the DDC at no additional cost to the City.

g. The Contractor shall develop, document, and implement a policy for accident prevention.

h. The Contractor shall not combine hazardous materials from other projects with material from this project.

i. **The Contractor shall obtain for the City an EPA hazardous waste generator identification number and a representative of Program Management, OEGS will review and sign the manifest as the generator.**

j. No materials shall be transported until approved by the DDC.

5. Off-Site Disposal

a. The Contractor shall be responsible for acceptance of the materials at an approved TSD facility, for ensuring that the facility is properly permitted to accept the stated materials, and that the facility provides the stated storage and/or disposal services.

b. In the event that the identified and approved facility ceases to accept the stated materials or the facility ceases operations, it is the Contractor's responsibility to locate an alternate approved and permitted facility(ies) for accepting materials. The Contractor is responsible for making the necessary arrangements to utilize the facility(ies), and the alternate facility(ies) must be approved in writing by the DDC in the same manner and with the same requirements as for the original facility(ies). This shall be done with no extra cost or delay to the City.

c. The Contractor shall submit all results and weights to the DDC.

d. **The Contractor is responsible to pay all fees associated with the generation and disposal of all excavated hazardous waste. These fees include, but are not limited to, the New York State Department of Finance and Taxation (DFT) quarterly fees for hazardous waste and the New York State DEC annual hazardous waste regulatory fee program. The Contractor shall submit a copy of proof of payment to the DDC and Program Management, OEGS.**

6. Equipment and Vehicle Decontamination

The Contractor shall design and construct a portable decontamination station to be used to decontaminate equipment and vehicles exiting from the exclusion zone. The cost for this work shall be paid under Item 8.01 S - Health and Safety. Disposal of decontamination liquids is described under Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

7. Record Keeping

The Contractor shall obtain manifest forms, and complete the shipment manifest records required by the appropriate regulatory agencies for verifying the material and quantity of each load in unit of volume and weight. Copies of each manifest shall be submitted to the DDC within four (4) business days following shipment, and within three (3) business days after notification of receipt of the facility. Any manifest discrepancies shall be reported immediately to the DDC and be resolved by the Contractor to the satisfaction of the DDC.

8.01 H.4 METHOD MEASUREMENT

Quantities for hazardous soil shall be measured in tons satisfactorily delivered to the treatment, storage or disposal facility. The tonnage will be determined by off-site truck scales, as per subsection 8.01 H1.3.B.2, that are capable of generating load tickets.

8.01 H.5 PRICE TO COVER

A. The unit price bid per ton for Item 8.01 H shall include the cost of furnishing all labor, materials, equipment, plan, and insurance for excavation, handling, transportation, disposal, documentation, permits, fees, taxes, stockpiling, hauling, and any other incidentals necessary to complete the work as specified herein for handling, transporting and disposal of hazardous soils.

B. Final disposal of non-hazardous materials shall be paid for under Item 8.01 C1 – Handling, Transporting and Disposal of Non-Hazardous Soils. Disposal of decontamination water shall be

paid under Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

C The independent Environmental Consultant shall be paid under Item 8.01 S – Health and Safety.

D. Backfill will be paid for under its respective item.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 H	Handling, Transporting, and Disposal of Hazardous Soils	Tons

ITEM 8.01 S HEALTH AND SAFETY

8.01 S.1 WORK TO INCLUDE

Health and Safety Requirements

A. Scope of Work

It is the Contractor's responsibility to stage and conduct his work in a safe manner. The Contractor shall implement a Health and Safety Plan (HASP) for contaminated/hazardous soil intrusive activities as set forth in Occupational Safety and Health Administration (OSHA) Standards 1910.120 and 1926.650-652. The Contractor shall ensure that all workers have at a minimum hazard awareness training. The Contractor shall segregate contaminated work area in secured exclusion zones. These zones shall limit access to Contractor personnel specifically trained to enter the work area. The exclusion zone shall be set up to secure the area from the public and untrained personnel. The project health and safety program shall apply to all construction personnel including persons entering the work area. In addition, the Contractor shall protect the public from on-site hazards, including subsurface contaminants associated with on-site activities. The HASP shall be signed off by a Certified Industrial Hygienist and reviewed by Program Management, Office of Environmental and Geotechnical Services (OEGS).

Work shall include, but not be limited to:

1. Implementation of a baseline medical program.
2. Providing safety equipment and protective clothing for site personnel, including maintenance of equipment on a daily basis; replacement of disposable equipment as required; decontamination of clothing, equipment and personnel; and providing all other health and safety measures.
3. Providing, installing, operating and maintaining on-site emergency medical first aid equipment as specified in this section for which payment is not provided under other pay items in this Contract.
4. Providing, installing, operating, maintaining and decommissioning all equipment and personnel decontamination facilities specified within this section, including, but not limited to, the decontamination pad, decontamination water supply, decontamination water collection equipment and all other items and services required for the

implementation of the health and safety requirements for which pay items are not provided elsewhere in this Contract.

5. Provide the minimum health and safety requirements for excavation activities within the limits of this Contract.

6. Implement and enforce a HASP: The HASP as presented in these specifications is dynamic with provisions for change to reflect new information, new practices or procedures, changing site environmental conditions or other situations which may affect site workers and the public. The HASP will also address measures for community protection, accident prevention, personnel protection, emergency response/contingency planning, air monitoring, odor control and hazardous chemicals expected on site. Providing a Confined Space Entry Program as defined in the Occupational Safety and Health Act, Confined Space Entry Standard, 29 CFR 1910.146.

B. Environmental Consulting Services

The Contractor shall retain an independent Environmental Consultant to obtain all permits and perform all field screening, air monitoring, community air monitoring, soil sampling, and health and safety services. The independent Environmental Consultant shall at a minimum provide documentation to the Program Management, OEGS demonstrating the minimum requirements as set forth below:

1. The independent Environmental Consultant project supervisor on site and other designated key personnel shall have a minimum of three (3) years experience in the environmental field dealing with issues associated with contaminated soils. Such experience shall include oversight on environmental, specifically volatile organic compound and dust monitoring services as a routine part of its daily operations.

2. The independent Environmental Consultant must be experienced in work of this nature, size, and complexity and must have previous experience in working with the DEC.

3. The independent Environmental Consultant shall furnish a project listing identifying the location, nature of services provided, owner, owner's contact, contact's telephone number, project duration and value for at least five (5) projects within the last three (3) years.

4. If conditions within the exclusion zone are deemed hazardous, then the Contractor and its independent Environmental Consultant shall ensure that all personnel working within identified exclusion zones and/or involved (direct contact) with the handling, storage or transport of hazardous and contaminated materials shall have completed a minimum of forty (40) hours of Health and Safety Training on Hazardous Waste Sites in accordance with 29 CFR 1910.120(e). The training program shall be conducted by a qualified safety instructor. If conditions in the exclusion zone are deemed to be non-hazardous, the independent Environmental Consultant shall provide site specific training.

5. The Contractor shall ensure that on-site management and supervisors directly responsible for or who supervise employees engaged in hazardous waste operations shall receive the training specified in above and at least eight (8) additional hours of specialized training on managing such operations at the time of job assignment.

C. Submittals

1. The Contractor shall submit, within forty-five (45) calendar days after the contract award, a written HASP as specified herein, to Program Management, OEGS for review and comment. The Contractor shall make all necessary revisions required by Program Management, OEGS and resubmit the HASP to the Program Management, OEGS for

acceptance. Start-up work for the project will not be permitted until written acceptance has been issued by the Program Management, OEGS.

2. Daily safety logs shall be maintained by the Contractor and shall be submitted to the DDC either on request or on completion of the work. Training logs shall be maintained by the Contractor and submitted to the DDC either on request or on completion of the work. Daily logs on air monitoring during excavation activities shall be prepared and maintained by the Contractor and submitted to the DDC either on request or upon completion of the work.

3. A closeout report shall be submitted by the Contractor to the DDC upon completion of the work within the defined exclusion zones. This report shall summarize the daily safety and monitoring logs and provides an overview of the Contractor's performance regarding environmental and safety issues. The report shall carefully document all areas where contamination has been found including pictures, addresses of locations, and potential sources.

4. Medical Surveillance Examinations: The Contractor shall submit to the DDC the name, office address and telephone number of the medical consultant utilized. Evidence of baseline medical examinations together with the evidence of the ability to wear National Institute for Occupational Safety and Health (NIOSH) approved respirators (as specified in American National Standards Institute (ANSI) Z88.6) shall be provided to the DDC for all construction personnel who are to enter the exclusion zones.

5. Accident Reports: All accidents, spills, or other health and safety incidents shall be reported to the DDC.

D. Health and Safety Plan

The HASP shall comply with OSHA regulations 29 CFR 1910.120/1926.65. This document shall at a minimum contain the following:

1. Description of work to be performed
2. Site description
3. Key personnel
4. Worker training procedures
5. Work practices and segregation of work area
6. Hazardous substance evaluation
7. Hazard assessment
8. Personal and community air monitoring procedures and action levels
9. Personal protective equipment
10. Decontamination procedures
11. Safety rules
12. Emergency procedures
13. Spill control, dust control, vapor/odor suppression procedures
14. Identification of the nearest hospital and route
15. Confined space procedures
16. Excavation safety procedures

8.01 S.2 MEASUREMENT

Health and Safety Requirements

A. 25% of the lump sum price will be paid when the following items are implemented or mobilized:

Medical surveillance program
Health and safety training
Health and safety plan
Environmental and personnel monitoring
Instrumentation
Spill control
Dust control
Personnel and equipment decontamination facilities
Personnel protective clothing
Communications
Mobilization

B. 50% will be paid in proportional monthly amounts over the period of work.

C 25% will be paid when the operation is demobilized and removed from the project site.

8.01 S.3 PRICE TO COVER

Health and Safety Requirements

The lump sum price bid for the health and safety requirements shall include all labor, materials, equipment, and insurance necessary to complete the work in accordance with these specifications. The price bid shall include, but not be limited to, the following:

A. Providing training, safety personnel, air monitoring and medical examinations as specified.

B. Providing safety equipment and protective clothing for site personnel, including maintenance of equipment on a daily basis; replacement of disposable equipment as required; decontamination of clothing, equipment and personnel; and all other health and safety activities or costs not paid for under other pay items in this Contract.

C. Providing, installing, operating and maintaining on-site emergency medical and first aid equipment. This includes all furnishings, equipment, supplies and maintenance of all medical equipment, and all other health and safety items and services for which payment is not provided under other pay items in this Contract.

D. Providing, installing, operating, maintaining, and decommissioning all personnel and equipment decontamination facilities, including decontamination pad, decontamination water supply, and all other items and services required for the implementation of the health and safety requirements for which pay items are not provided elsewhere in this Contract. Vehicle decontamination pads shall be included in the price of this item. Disposal of decontamination fluid shall be paid for under Item 8.01 W1 – Removal, Treatment and Discharge/Disposal of Contaminated Water.

E. Spill Control

1. Payment shall account for furnishing, installing, and maintaining all spill control equipment and facilities. Payment will include equipment and personnel to perform emergency measures required to contain any spillage and to remove spilled materials and soils or liquids that become contaminated due to spillage during work within the exclusion zones and handling of excavated soils and liquids from these areas. This collected spill material will be properly disposed of.

2. Payment under this item shall not include testing, handling, transportation or disposal of petroleum-contaminated/potentially hazardous soils excavated during construction. The price for this work will be paid for under Items 8.01 C1 – Handling, Transporting and

Disposal of Non-Hazardous Contaminated Soils, 8.01 C2 – Sampling and Testing of Contaminated/Potentially Hazardous Soil for Disposal Parameters or 8.01 H – Handling, Transporting and Disposal of Hazardous Soils, as appropriate.

F. Dust Control

Payment shall account for furnishing, installing, and maintaining dust control equipment and facilities to be used whenever applicable dust levels are exceeded. Payment will include all necessary labor, equipment, clean water, foam, and all other materials required by the Dust Control Plan. The DOH Community Air Monitoring Plan (CAMP) may be used as guidance.

G. Vapor/Odor Suppression

Payment shall account for furnishing, installing and maintaining vapor/odor control equipment and facilities to be used whenever organic vapor monitoring or the presence of odors indicates that vapor suppression is required to protect workers or the public. Payment will include all necessary labor, equipment, clean water, foam and all other materials required by the Vapor/Odor Suppression Plan.

H. Mobilization/Demobilization

1. Mobilization

Payment shall include but not be limited to:

a. All work required to furnish, install and maintain all signs, fencing, support zone facilities, parking areas and all temporary utilities;

b. All work required to furnish, install, and maintain an office space with phone and utilities for health and safety personnel;

c. All work required for complete preparation of lay down area for roll-off containers, including sampling, and any required fencing;

d. All direct invoiced cost from bonding companies and government agencies for permits and costs of insurance; and

e. All other items and services required for mobilization and site preparation.

2. Demobilization

Payment shall include but not be limited to: All work required to sample the area; remove from the site all equipment, temporary utilities and supporting facilities; performance of necessary decontamination and repairs; disposal of disposable equipment and protective gear and other items and services required for complete demobilization.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 S	Health and Safety	Lump Sum

ITEM 8.01 W1 REMOVAL, TREATMENT, AND DISCHARGE/DISPOSAL OF CONTAMINATED WATER

8.01 W1.1 WORK TO INCLUDE

General: This work shall consist of the proper removal and disposal of all contaminated groundwater and decontamination water generated during construction operations. The Contractor shall be solely responsible for the proper disposal or discharge of all contaminated water generated at the job site. The Contractor will have the option of treating water on-site for discharge to the combined sanitary/storm sewer system or removing contaminated water for off-site disposal. The Contractor shall be responsible to choose a method compatible to the construction work and shall be compensated on a per day basis regardless of method employed. The Contractor will be compensated for only those days where the system is in full operation.

The Contractor shall retain a dewatering/water treatment Specialist (hereinafter the "Specialist") and laboratory as specified under Item 8.01 W2 – Sampling and Testing of Contaminated Water, to conduct any testing that may be required for disposal of impacted water.

The dewatering/water treatment Specialist is responsible to obtain all permits; perform all water sampling, testing; and provide ancillary services related to dewatering and water treatment. The Specialist shall at a minimum provide documentation to the Program Management, Office of Environmental and Geotechnical Services (OEGS) demonstrating the minimum requirements as set forth below:

1. The Specialist shall demonstrate that it has, at a minimum, three (3) years experience in the design of dewatering plans. The Specialist should demonstrate expertise dealing with issues associated with contaminated water. During that three (3) year period, the Specialist shall demonstrate that it provided dewatering and water treatment systems as a routine part of its daily operations.
2. The Specialist must be experienced in work of this nature, size, and complexity and must have previous experience in working with the DEC.
3. The Specialist shall furnish a project listing identifying the location, nature of services provided, owner, owner's contact, contact's telephone number, project duration and value for at least five (5) projects within the last three (3) years of a similar nature, size, and complexity to this one.
4. If conditions within the exclusion zone are deemed hazardous, then the Contractor and its independent Environmental Consultant shall ensure that all personnel working within identified exclusion zones and/or involved (direct contact) with the handling, storage or transport of hazardous and contaminated material shall have completed a minimum of forty (40) hours of Health and Safety Training on Hazardous Waste Sites in accordance with 29 CFR 1910.120(e). The training program shall be conducted by a qualified safety instructor. If conditions in the exclusion zone are deemed to be non-hazardous, the Specialist shall be responsible to provide site-specific training to its employees and other affected personnel.
5. The Contractor shall ensure that on-site management and supervisors directly responsible for or who supervise employees engaged in hazardous waste operations shall receive the training specified in above and at least eight (8) additional hours of specialized training on managing such operations at the time of job assignment.

The Contractor shall document all operations associated with the handling, sampling and disposal of contaminated water, and ensure that they are in compliance with applicable Federal, State and Local statutes and regulations.

The Contractor shall supply all labor, equipment, transport, plant, material, treatment, and other incidentals required to conduct the specified work of this section.

If water will be disposed of into the combined sanitary/storm sewer system, the Contractor shall ensure the Specialist treats the water to comply with the New York City Department of Environmental Protection (DEP) Sanitary/Combined and Storm Sewer Effluent Limit concentrations prior to discharge. The Contractor is responsible for providing settling or filtering tanks and any other apparatus required by DEP. Alternatively, the Contractor can provide a plan for transport and disposal at an off-site waste disposal facility.

Within forty-five (45) calendar days after award of Contract, the Contractor shall submit to the Program Management, OEGS for review, a Water Handling Plan (WHP). The WHP must be approved by the Program Management, OEGS, prior to the Contractor's commencement of work. The minimum requirements for the WHP are specified herein Item 8.01W 1.2, for each type of disposal (disposal into the combined sanitary/storm sewer or off-site disposal). The Contractor shall maintain a complete, up to date copy of the WHP on the job site at all times.

8.01 W1.2 CONSTRUCTION DETAILS

For each disposal method the Contractor proposes to utilize (disposal to combined sanitary/storm sewer or off-site disposal), the WHP shall include the information required in paragraphs A and B below, as appropriate.

A. On-site treatment and discharge into New York City combined sanitary/storm sewers.

1. Regulations: The Contractor shall comply with all applicable regulations. This includes but may not be limited to:

   Title 15-New DEP Sewer Use Regulations.

2. Permits: The Contractor is solely responsible to obtain all necessary and appropriate Federal, State and Local permits and approvals. The Contractor will be responsible for performing all and any system pilot tests required for permit approval. This includes but may not be limited to:

   a. Industrial waste approval for the New York City sewer system.

   b. Groundwater discharge permit for the New York City sewer system (DEP Division of Sewer Regulation and Control), if discharge to sewer exceeds 10,000 gallons per day.

   c. The Contractor shall comply with DEC State Pollutant Discharge Elimination System (SPDES) Permit Number GP-0-10-001, General Permit for Stormwater Discharges.

   d. Long Island well point permit for Brooklyn and Queens sites, if well points are used for dewatering.

   e. Wastewater quality control application, DEP.

3. The WHP for this portion of the work shall include at a minimum:

a. Identification and design of Contractor's proposed treatment to assure that the water meets the DEP sewer use guidelines prior to discharge to the sewer, including identification of all materials, procedures, settling or filtering tanks, filters and other appurtenances proposed for treatment and disposal of contaminated water.

b. The name, address and telephone number of the contact for the Contractor's proposed chemical laboratory, as well as the laboratory's certifications under Federal, State or non-governmental bodies.

c. The name, address and telephone number of the contact for the Contractor's proposed independent Environmental Consultant.

d. Copies of all submitted permit applications and approved permits the Contractor have received.

4. Materials

The Contractor shall supply all settling or filtering tanks, pumps, filters, treatment devices and other appurtenances for treatment, temporary storage and disposal of contaminated water. All equipment shall be suitable for the work described herein.

5. Execution

a. The Contractor is solely responsible for disposal of all water, in accordance with all Federal, State and Local regulations.

b. The Contractor is solely responsible for any treatment required to assure that water discharged into the sewer is in compliance with all permits and Federal, State and Local statutes and regulations.

c. The Contractor is solely responsible for the quality of the water disposed of into the sewers.

d. The Contractor is responsible for sampling and testing of water for the DEP Sanitary/Combined and Storm sewer Effluent Limit concentrations. The quality of the data is the Contractor's responsibility. Any sampling and testing shall be conducted and paid in accordance with Item 8.01 W2 – Sampling and Testing of Contaminated Water.

e. The Contractor shall be responsible to maintain the discharge rate to the sewer such that all permit requirements are met, the capacity of the sewer is not exceeded and no surcharging occurs downstream due to the Contractor's actions. Dewatering by means of well points or deep wells will not be allowed in the Boroughs of Brooklyn or Queens where the rate of pumping exceeds forty-five (45) gallons per minute unless the appropriate permit has been secured from the DEC.

f. Disposal of Treatment Media

(1) The Contractor shall be responsible for disposal or recycling of treatment media in accordance with all Federal, State and Local regulations.

(2) The Contractor shall provide the DDC with all relevant documentation concerning the disposal of treatment media, including manifests, bills of

lading, certificates of recycling or destruction and other applicable documentation.

(3) **Disposal of treatment media shall not be considered as a separate pay item; instead it shall be considered as incidental work thereto and included in the unit price bid.**

B. Off-Site Disposal

1. Regulations: The Contractor shall conform to all applicable Federal, State and Local regulations pertaining to the transportation, storage and disposal of any hazardous and/or non-hazardous materials as listed in Attachment 2.

2. The following shall be submitted to the DDC prior to initiating any off-site disposal:

a. (1) Name and waste transporter permit number

(2) Address

(3) Name of responsible contact for the hauler

(4) Any and all necessary permit authorizations for each type of waste transported

(5) Previous experience in performing the type of work specified herein

b. General information for each proposed treatment/disposal facility and at least one backup treatment/disposal facility

(1) Facility name and EPA identification number

(2) Facility location

(3) Name of responsible contact for the facility

(4) Telephone number for contact

(5) Unit of measure utilized at facility for costing purposes

c. A listing of all permits, licenses, letters of approval and other authorizations to operate, which are currently held and valid for the proposed facility as they pertain to receipt and management of the wastes derived from this Contract.

d. A listing of all permits, licenses, letters of approval and other authorizations to operate which have been applied for by the proposed facility but not yet granted or issued. Provide dates of application(s) submitted. Planned submittals shall also be noted.

e. The Contractor shall specify and describe the disposal/containment unit(s) that the proposed facility will use to manage the waste and provide dates of construction and beginning of use, if applicable. Drawings may be provided. The Contractor shall identify the capacity available in the units and the capacity reserved for the subject waste.

f. The Contractor shall provide the date of the proposed facility's last compliance inspection.

g. A list of all active (unresolved) compliance orders, agreements, enforcement notices or notices of violations issued to the proposed facility shall be submitted. The source and nature of the cause of violation shall be stated, if known. If groundwater contamination is noted, details of the facility's groundwater monitoring program shall be provided.

h. Description of all sampling and field/laboratory analyses that will be needed to obtain disposal facility approval.

3. Materials

All vessels for temporary storage and transport to an off-site disposal facility shall be as required in DOT regulations.

4. Execution

a. General

(1) The Contractor shall organize and maintain the material shipment records/manifests required by Federal, State and Local law. The Contractor shall include all bills of lading, certificates of destruction, recycling or treatment and other applicable documents.

(2) The Contractor shall coordinate the schedule for truck arrival and material deliveries at the job site to meet the approved project schedule. The schedule shall be compatible with the availability of equipment and personnel for material handling at the job site.

(3) The Contractor shall inspect all vehicles leaving the project site to ensure that contaminated liquids are not spilling and are contained for transport.

(4) The Contractor shall obtain letters of commitment from the waste haulers and the treatment, disposal or recovery facility to haul and accept shipment. The letter shall indicate agreement to handle and accept the specified estimated quantities and types of material during the time period specified in the project schedule and any time extension as deemed as necessary.

(5) The Contractor shall verify the volume of each shipment of water from the site.

(6) The Contractor is responsible for sampling and testing of water for off-site disposal. The quality of the data is the Contractor's responsibility. Any sampling and testing shall be conducted and paid in accordance with Item 8.01 W2 – Sampling and Testing of Contaminated Water.

(7) The Contractor shall be responsible for any additional analyses required by the TSD facility, and for the acceptance of the water at an approved TSD facility.

b. Hauling

(1) The Contractor shall not deliver waste to any facility other than the TSD facility(ies) listed on the shipping manifest.

(2) The Contractor shall coordinate manifesting, placarding of shipments, and vehicle decontamination. All quantities shall also be measured and recorded upon arrival at the TSD facility(ies). If any deviation between the two records occurs, the matter is to be reported immediately to the DDC and shall be resolved by the Contractor to the satisfaction of the DDC.

(3) The Contractor shall be held responsible for any and all actions necessary to remedy situations involving material spilled in transit or mud and dust tracked off-site. This cleanup shall be accomplished at the Contractor's expense.

(4) The Contractor shall be responsible for inspecting the access routes for road conditions, overhead clearance and weight restrictions.

(5) The Contractor shall only use the transporter(s) identified in the WHP for the performance of work. Only a transporter with a current Part 364 Waste Transporter Permit from DEC may transport this material. Any use of substitute or additional transporters must have previous written approval from the DDC at no additional cost to the City.

(6) The Contractor shall develop, document, and implement a policy for accident prevention.

(7) The Contractor shall not combine waste materials from other projects with material from this project.

(8) The Contractor shall obtain for the City a hazardous waste generator identification number and will sign the manifest as the generator, if necessary.

(9) No material shall be transported until approved by the DDC.

c. Disposal Facilities

(1) The Contractor shall use only the TSD facility(ies) identified in the WHP for the performance of the work. Substitutions or additions shall not be permitted without prior written approval from the Program Management, OEGS, and, if approved, shall be at no extra cost to the City.

(2) The Contractor shall be responsible for acceptance of the material at an approved TSD facility, for ensuring that the facility is properly permitted to accept the stated material, and that the facility provides the stated storage and/or disposal services.

(3) The DDC reserves the right to contact and visit the disposal facility and regulatory agencies to verify the agreement to accept the stated material and to verify any other information provided. This does not in any way relieve the Contractor of his responsibilities under this Contract.

(4) In the event that the identified and approved facility ceases to accept the stated materials or the facility ceases operations, it is the Contractor's responsibility to locate an alternate approved and permitted facility(ies) for accepting materials. The Contractor is responsible for making the necessary arrangements to utilize the facility(ies), and the alternate facility(ies) must be approved in writing by the DDC in the same manner and with the same

requirements as for the original facility(ies). This shall be done with no extra cost or delay to the City.

d. Equipment and Vehicle Decontamination

(1) The Contractor shall design and construct a portable decontamination station to be used to decontaminate equipment and vehicles exiting the exclusion zone. The cost for this work shall be paid under Item 8.01 S – Health and Safety.

8.01 W1.3 METHOD OF MEASUREMENT

The quantity for on-site treatment and discharge or off-site disposal shall be on a per day basis.

8.01 W1.4 PRICE TO COVER

A. The per day price bid for Item 8.01 W1 shall include the cost of furnishing all labor, materials, equipment, plan, and insurance for handling, transportation, disposal, documentation, permits, hauling, mobilization and demobilization, and any other incidentals thereto to complete the work.

B. The Contractor will not be paid for water that is within the DEP Sewer Discharge Limits.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 W1	Removal, Treatment and Disposal/Discharge of Contaminated Water	Day

ITEM 8.01 W2 SAMPLING AND TESTING OF CONTAMINATED WATER

8.01 W2.1 WORK TO INCLUDE

A. Description

The work shall consist of sampling and testing of potentially contaminated groundwater, surface runoff within the excavated area and all contaminated water generated during the decontamination process.

B. Sampling and Testing

1. The Contractor is responsible, at a minimum, for sampling and testing of contaminated water for the DEP Sanitary/Combined and Storm Sewer Effluent Limit concentrations as listed in Attachment 1. The quality of the data is the Contractor's responsibility. Any additional testing required by the Federal, State and/or disposal facilities shall be included in the bid price of this Item.
2. All sampling and testing shall be conducted by a person trained in sampling protocols using accepted standard practices and/or the DEC sampling guidelines and protocols.
3. All sample containers shall be marked with legible sample labels which shall indicate the project name, sample location and/or container, the sample number, the date and time of

sampling, preservatives utilized, how the sample was chilled to 4 degrees Celsius, and other information that may be useful in determining the character of the sample.

4. Chain-of-custody shall be tracked from laboratory issuance of sample containers through receipt of the samples.

5. The Contractor shall maintain a bound sample log book. The Contractor shall provide the DDC access to it at all times and shall turn it over to the DDC in good condition at the completion of the work. The following information, as a minimum, shall be recorded to the log:

   a. Sample identification number

   b. Sample location

   c. Field observation

   d. Sample type

   e. Analyses

   f. Date/time of collection

   g. Collector's name

   h. Sample procedures and equipment used

   i. Date sent to laboratory/name of laboratory

6. Only dedicated sampling equipment may be used to collect these samples. All equipment involved in field sampling must be decontaminated before being brought to the site, and must be properly disposed of after use.

7. Samples shall be submitted to the Contractor's laboratory within the holding times for the parameters analyzed.

8. All analyses must be done by a laboratory that has received approval from the DOH's ELAP for the methods to be done. The Contractor must specify the laboratory in the WHP.

9. Analytical results for water discharged to the sewer and for off-site disposal must be submitted to the DDC no later than five (5) days after sample collection.

10. The City reserves the right to direct the Contractor to conduct alternative sampling in lieu of the parameters described above, if the situation warrants. The substitute sampling parameters shall be of equal or lesser monetary value than those described above, as determined by industry laboratory pricing standards.

8.01 W2.2 METHOD OF MEASUREMENT

Quantities for samples shall be measured as the number of sets of samples that are tested for the DEP Sanitary/Combined and Storm Sewer Effluent Limit concentrations. A set shall be defined as one (1) representative sample analyzed for the full range of DEP parameters as specified in attachment 1.

8.01 W2.3 PRICE TO COVER

The unit price bid per set for Item 8.01 W2 shall include the cost of furnishing all labor, materials, equipment, plan, and insurance for handling, transport, sampling, testing, documentation, permits, other incidentals necessary to complete the work of sampling and testing of contaminated water. Any additional costs incurred by the Contractor for sampling and testing of contaminated water shall be included in the bid price of this Item.

Payment will be made under:

ITEM NUMBER	ITEM	PAYMENT UNIT
8.01 W2	Sampling and Testing of Contaminated Water	Set

ATTACHMENT 1: NYCDEP LIMITATIONS FOR DISCHARGE TO STORM, SANITARY/COMBINED SEWER

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

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTEWATER TREATMENT

Limitations for Effluent to Sanitary or Combined Sewers

Parameter[1]	Daily Limit	Units	Sample Type	Monthly Limit
Non-polar material[2]	50	mg/l	Instantaneous	---
pH	5-11	SU's	Instantaneous	---
Temperature	< 150	Degree F	Instantaneous	---
Flash Point	> 140	Degree F	Instantaneous	---
Cadmium	2 0.69	mg/l mg/l	Instantaneous Composite	--- --
Chromium (VI)	5	mg/l	Instantaneous	---
Copper	5	mg/l	Instantaneous	---
Lead	2	mg/l	Instantaneous	---
Mercury	0.05	mg/l	Instantaneous	---
Nickel	3	mg/l	Instantaneous	---
Zinc	5	mg/l	Instantaneous	---
Benzene	134	ppb	Instantaneous	57
Carbontetrachloride	---	---	Composite	---
Chloroform	---	---	Composite	---
1,4 Dichlorobenzene	---	---	Composite	---
Ethylbenzene	380	ppb	Instantaneous	142
MTBE (Methyl-Tert-Butyl-Ether)	50	ppb	Instantaneous	---
Naphthalene	47	ppb	Composite	19
Phenol	---	---	Composite	---
Tetrachloroethylene (Perc)	20	ppb	Instantaneous	---
Toluene	74	ppb	Instantaneous	28
1,2,4 Trichlorobenzene	---	---	Composite	---
1,1,1 Trichloroethane	---	---	Composite	---
Xylenes (Total)	74	ppb	Instantaneous	28
PCB's (Total)[3]	1	ppb	Composite	---
Total Suspended Solids (TSS)	350[4]	mg/l	Instantaneous	---
CBOD[5]	---	---	Composite	---

Chloride[5]	---	---	Instantaneous	---
Total Nitrogen[5]	---	---	Composite	---
Total Solids[5]	---	---	Instantaneous	---

1 All handling and preservation of collected samples and laboratory analyses of samples shall be performed in accordance with 40 C.F.R. pt. 136. If 40 C.F.R. pt. 136 does not cover the pollutant in question, the handling, preservation, and analysis must be performed in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater." All analyses shall be performed using a detection level less than the lowest applicable regulatory discharge limit. If a parameter does not have a limit, then the detection level is defined as the least of the Practical Quantitation Limits identified in NYSDEC's Analytical Detectability and Quantitation Guidelines for Selected Environmental Parameters, December 1988

2 Analysis for ***non-polar materials*** must be done by EPA method 1664 Rev. A. Non-Polar Material shall mean that portion of the oil and grease that is not eliminated from a solution containing N–Hexane, or any other extraction solvent the EPA shall prescribe, by silica gel absorption.

3 Analysis for PCB=s is required if ***both*** conditions listed below are met:
1) if proposed discharge ≥ 10,000 gpd;
2) if duration of a discharge > 10 days.
Analysis for PCB=s must be done by EPA method 608 with MDL=<65 ppt. PCB's (total) is the sum of PCB-1242 (Arochlor 1242), PCB-1254 (Arochlor 1254), PCB-1221 (Arochlor 1221), PCB-1232 (Arochlor 1232), PCB-1248 (Arochlor 1248), PCB-1260 (Arochlor 1260) and PCB-1016 (Arochlor 1016).

4 For discharge ≥ 10,000 gpd, the TSS limit is 350 mg/l. For discharge < 10,000gpd, the limit is determined on a case by case basis.

5 Analysis for Carbonaceous Biochemical Oxygen Demand (CBOD), Chloride, Total Solids and Total Nitrogen are required if proposed discharge ≥ 10,000 gpd.

ATTACHMENT 2: APPLICABLE REGULATIONS

Applicable regulations include, but are not limited to:

1. 49 CFR 100 to 179 - DOT Hazardous Materials Transport and Manifest System Requirements
2. New York State Department of Environmental Conservation (DEC), Spills Technology and Remediation Series (STARS) Memo #1
3. 6 NYCRR 360-1 DEC Solid Waste Management Facilities
4. 6 NYCRR 364- Waste Transporter permits
5. Local restrictions on transportation of waste/debris
6. 40 CFR 260 to 272 - Hazardous Waste Management (RCRA)
7. 6 NYCRR 371 - Identification and Listing of Hazardous Wastes
8. 6 NYCRR 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities
9. 6 NYCRR 373-1 - Hazardous Waste Treatment, Storage and Disposal Facility Permitting Requirements
10. 6 NYCRR 376 - Land Disposal Restrictions
11. Posted weight limitations on roads or bridges
12. Transportation Skills Programs, Inc. 1985 - Hazardous Materials and Waste Shipping Papers and Manifests
13. Other local restrictions on transportation of waste/debris
14. Occupational Safety and Health Administration (OSHA), Standards and Regulations, 29 CFR 1910 (General Industry)
15. OSHA 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response
16. OSHA Safety and Health Standards 29 CFR 1926 (Construction Industry)
17. OSHA 29 CFR 1910.146 Confined Space Entry Standard
18. Standard Operating Safety Guidelines, EPA Office of Emergency and Remedial Response Publication, 9285.1-03
19. NIOSH / OSHA / USCG / EPA Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1986)
20. U.S. Department of Health and Human Services (DHHS) "NIOSH Sampling and Analytical Methods," DHHS (NIOSH) Publication 84-100
21. ANSI, Practice for Respiratory Protection, Z88.2 (1980)
22. ANSI, Emergency Eyewash and Shower Equipment, Z41.1 (1983)
23. ANSI, Protective Footwear, Z358.1 (1981)
24. ANSI, Physical Qualifications for Respirator Use, Z88.6 (1984)
25. ANSI, Practice for Occupational and Educational Eye and Face Protection, Z87.1 (1968)
26. Water Pollution Control Federation "Manual of Practice No. 1, Safety in Wastewater Works"
27. NFPA No. 327 "Standard Procedures for Cleaning and Safeguarding Small Tanks and Containers"

28. Occupational Safety and Health Act Confined Space Entry Standard 29 CFR 1910.146.87
29. Department of Transportation 49 CFR 100 through 179
30. Department of Transportation 49 CFR 387 (46 FR 30974, 47073)
31. Environmental Protection Agency 40 CFR 136 (41 FR 52779)
32. Environmental Protection Agency 40 CFR 262 and 761
33. Resource Conservation and Recovery Act (RCRA)
34. Any transporter of hazardous or non-hazardous materials shall be licensed in the State of New York and all other states traversed in accordance with all applicable regulations.

ATTACHMENT 3: DEFINITIONS

Contaminated Groundwater and Decontamination Fluids: Groundwater within the excavation trench or decontamination water that contains regulated compounds above the NYCDEP Discharge to Sanitary/Combined Sewer Effluent limits.

Disposal or Treatment Facility: A facility licensed to accept either non-hazardous regulated waste or hazardous waste for either treatment or disposal.

Exclusion Zone: Work area that will be limited to access by Contractor personnel specifically trained to enter the work area only. The exclusion zone will be set up to secure the area from the public and untrained personnel. The project health and safety program will apply to all construction personnel including persons entering the work area.

Hazard Assessment: An assessment of any physical hazards that may be encountered on a work site.

Hazardous Soils: Soils that exhibit any of the characteristics of a hazardous waste, namely ignitability, corrosivity, reactivity, and toxicity, as defined in 6 NYCRR Part 371, Section 371.3 and 40 CFR Section 261.

Hazardous Substance Evaluation: An evaluation of the possible or known presence of any hazardous substances that may be encountered on a job site. This evaluation is included in the Health and Safety Plan and will include the identification and description of any hazardous substances expected to be encountered. Material Safety Data Sheets (MSDS) will be included for each substance.

Health and Safety Plan: A plan employed at a work site that describes all the measures that will be taken to assure that all work is conducted in a safe manner, and that the health of the workers and the public will be insured.

Material Handling Plan: A plan outlining the methods that will be employed to handle, transport and dispose of contaminated materials.

Non-Hazardous Contaminated Soils: Soils which exhibit a distinct chemical or petroleum odor, or exhibit elevated photoionization detector readings but are not classified as hazardous waste under 6 NYCRR Part 371, Section 371.3 and 40 CFR Section 261.

New York State Health Department's Environmental Laboratory Approval Program: A program by which the state of New York approves and accredits environmental testing laboratories.

PCBs: Polychlorinated biphenyls are a group of toxic compounds commonly used as a coolant in transformers and other electrical components.

Photoionization Detector: A hand held instrument used to measure volatile organic compounds in air. The instrument ionizes the organic molecules through the use of an ultraviolet lamp.

RCRA Hazardous Waste Characteristics: Characteristics of a material which may indicate the material is hazardous. These include: ignitability corrosivity, reactivity, and toxicity.

Total Petroleum Hydrocarbons: An analytical procedure used to determine the total amount of petroleum compounds in a material.

ATTACHMENT 4: PHASE II SUBSURFACE CORRIDOR INVESTIGATION REPORT

Phase II Subsurface Corridor Investigation Report

For

New 20 Inch Sub Aqueous Water Main to City Island

Eastchester Bay Crossing - City Island Bridge

Bronx, New York

DDC PROJECT NO. HED564

WORK ORDER NO. 7955-LIRO-2-7806

CONTRACT REGISTRATION NO. 20101417627

Prepared for:

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

Bureau of Environmental and Geotechnical Services

30-30 Thomson Avenue, Fifth Floor

Long Island City, New York 11101

Prepared by:

LiRo Engineers, Inc.

703 Lorimer Street

Brooklyn, New York 11211

PROJECT NO. 10-62-205

June 29, 2012

TABLE OF CONTENTS

EXECUTIVE SUMMARY **ES-1**
1.0 INTRODUCTION **1**
1.1 SUMMARY OF PREVIOUS ENVIRONMENTAL INVESTIGATIONS 1
1.2 SCOPE OF WORK 1
2.0 CORRIDOR INFORMATION **3**
2.1 CORRIDOR LOCATION, DESCRIPTION, AND USE 3
2.2 DESCRIPTION OF SURROUNDING PROPERTIES 3
2.3 CORRIDOR AND REGIONAL TOPOGRAPHIC SETTING 3
2.4 CORRIDOR AND REGIONAL GEOLOGY 3
2.5 CORRIDOR AND REGIONAL HYDROGEOLOGY 4
3.0 CORRIDOR EVALUATION **5**
3.1 SOIL QUALITY INVESTIGATION 5
3.2 GROUNDWATER QUALITY INVESTIGATION 6
3.3 LABORATORY ANALYSES 6
3.4 DATA EVALUATION 7
4.0 FINDINGS **8**
4.1 FIELD SCREENING 8
4.2 SOIL AND GROUNDWATER LABORATORY ANALYTICAL RESULTS 8
4.2.1 Volatile Organic Compounds (VOCs) in Soil 8
4.2.2 Semi-Volatile Organic Compounds (SVOCs) in Soil 8
4.2.3 Target Analyte List Metals (TAL Metals) in Soil 8
4.2.4 Pesticides in Soil 8
4.2.5 Pesticides in Soil 8
4.2.6 Waste Classification of Soil 9
4.2.7 Analysis of NYCDEP Parameters in Groundwater 9
5.0 CONCLUSIONS AND RECOMMENDATIONS **10**
6.0 STATEMENT OF LIMITATIONS **12**

Tables

	1	Summary of Environmental Boring Data
	2	Summary of TCL VOCs Detected in Soil
	3	Summary of TCL SVOCs Detected in Soil
	4	Summary of TAL Metals Detected in Soil
	5	Summary of Pesticides Detected in Soil
	6	Summary of Herbicides Detected in Soil
	7	Summary of PCBs Detected in Soil
	8	Summary of Waste Characterization in Soil
	9	Groundwater Quality Compared to NYC DEP Sewer Effluent Parameters

Figures

	1	Topographic Corridor Location Map
	2	Sample Location Plan

Appendices

	A	Boring Location Sketches
	B	Geologic Boring Logs and Temporary Well Construction Details
	C	Laboratory Analytical Results

EXECUTIVE SUMMARY

On behalf of the New York City Department of Design and Construction (NYCDDC), LiRo Engineers, Inc. (LiRo) conducted a Phase II Subsurface Corridor Investigation (SCI) of the Eastchester Bay Crossing of the City Island Bridge (hereinafter referred to as the Corridor). The Corridor consists of the City Island Bridge bounded by City Island Avenue and City Island Road and is located within the City Island neighborhood of Bronx, New York.

LiRo prepared a Phase I Corridor Assessment Report (CAR) dated August 22, 2011, which presented the results of a survey conducted along the Corridor to assess the presence of potential sources of subsurface contamination within the immediate vicinity of the Corridor. The CAR identified zero (0) sites that had a potential "High" risk and one (1) site that had a potential "Moderate" risk to impact the subsurface (soil and/or groundwater) of the Corridor and recommended the performance of a SCI. The objective of the SCI was to assess the presence of subsurface contamination that might impact proposed construction activities. The proposed construction activities for the Corridor include the installation of two new 20 inch sub aqueous water mains to City Island and temporary relocation of the City Island Bridge. The SCI consisted of the following components:

- The advancement of two (2) borings to a depth of approximately 20 feet below ground surface (ftbg) or refusal, whichever was encountered first and the field screening of soil samples, including photo-ionization detector (PID) readings and visual and olfactory indicators of contamination (staining, odors);

- The collection of two (2) soil samples, which were analyzed for United States Environmental Protection Agency (USEPA) Target Compound List (TCL) volatile organic compounds (VOCs) via Method 8260;

- The collection of two (2) soil samples, which were analyzed for the following parameters: (1) TCL Base Neutral/Acid (BN/A) extractable semi-volatile organic compounds (SVOCs) via USEPA Method 8270; (2) Target Analyte List (TAL) metals via USEPA Method 6010B/7010; (3) TCL pesticides via USEPA Method 8081A; (4) TCL Herbicides via USEPA Method 8151A; and, (5) TCL polychlorinated biphenyls (PCBs) via USEPA Method 8082;

- The collection of one (1) waste characterization soil sample, which was analyzed for: (1) the USEPA Full Toxicity Characteristics Leaching Procedure (TCLP) parameters; (2) the Resource Conservation and Recovery Act (RCRA) Characteristics (ignitability, reactivity, and corrosivity); and, (3) Total Petroleum Hydrocarbons Diesel Range Organics/Gasoline Range Organics (TPHC DRO/GRO);

- The installation of one (1) temporary well point (TWP), the collection of one (1) groundwater sample from the TWP, and the laboratory analyses of this sample for the parameters published by the New York City Department of Environmental Protection (NYCDEP) as Limitations for Effluent to Sanitary or Combined Sewers (NYCDEP Sewer Discharge Criteria); and,

- The preparation of this report, which includes tables summarizing the laboratory analytical results and figures depicting boring locations, significant site features and, if applicable, contamination occurrence and distribution.

In order to evaluate the subsurface soil and groundwater quality, laboratory analytical results were compared with the regulatory standards identified in: (1) New York State Department of Environmental Conservation (NYSDEC) CP-51 – Supplemental Soil Cleanup Objectives (SSCOs); (2) NYSDEC Subpart 375-6: Remedial Program Unrestricted and Restricted Use (Track 1 and Track 2) Soil Cleanup Objectives (SCOs); and, (3) the Toxicity Characteristic Regulatory Levels for Hazardous Waste published in RCRA and NYSDEC Part 371. In order to evaluate the groundwater quality, the laboratory analytical results for the groundwater samples were compared to the NYCDEP Sewer Discharge Criteria.

The subsurface soils encountered during this SCI from grade to 20 ftbg consisted of fill comprised of medium to fine SAND with some ash, gravel, and rocks. The fill is underlain by reddish brown SAND in soil boring SB-01 at a depth of 17 to 20 ft bgs. Man-made materials (i.e., ash), which are indicative of urban fill, were encountered throughout the Corridor at depths ranging from grade to 20 ftbg. Groundwater was encountered at approximately ten (10) ftbg within SB-01 and 16 ftbg within SB-02. Bedrock was not encountered.

No elevated PID readings, petroleum odors, or visual evidence of staining was noted during the subsurface investigation. In both of the composite soil samples collected, no VOCs, PCBs, or herbicides were detected.

In both of the composite soil samples collected, SVOCs were detected. Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene were detected at concentrations exceeding Unrestricted Use (Track 1) and Restricted Use (Track 2) SCOs in the two (2) composite soil samples collected.

In both of the composite soil samples collected, metals were detected. Copper, iron, lead, mercury, and zinc were detected above Unrestricted Use (Track 1) SCOs and/or NYSDEC SSCOs in one (1) of the two (2) composite soil samples collected.

In one (1) of the two (2) composite soil samples collected, one (1) pesticide (4,4'-DDT) was detected. 4,4'-DDT was detected in sample COMP-SB-01 at a concentration that exceeds the Unrestricted Use (Track 1) SCO.

TPHC DRO was detected at 92,692 ug/kg and GRO was detected at 25.5 ug/kg in the one (1) waste characterization sample collected. There are no regulatory standards for DRO and GRO.

The one (1) waste characterization soil sample collected did not exhibit evidence of hazardous waste characteristics.

Total Suspended Solids (TSS) was detected at a concentration of 420 milligrams per liter (mg/L) in the one (1) groundwater sample collected; this concentration exceeds the NYCDEP Sewer Discharge Limitation of 350 mg/L.

Conclusions

Based on the evaluation of the field screening data and the laboratory analytical results, and a comparison to applicable regulatory standards, the following conclusions are presented:

- Field screening did not identify any elevated PID readings, petroleum odors, or visual evidence of staining during the subsurface investigation;

- Field screening and laboratory analytical results did not identify petroleum-impacted soils within the Corridor. While elevated concentrations of SVOCs, metals, and pesticides were detected within the subsurface soils within the Corridor, this is likely attributed to: (a) contaminants in historic fill material placed on the Corridor; and/or, (c) natural background levels (metals);

- The subsurface soils did not exhibit hazardous waste characteristics; and,

- The groundwater sample contained concentrations of TSS that exceeded the NYCDEP Sewer Discharge Criteria. The presence of elevated levels of TSS in the groundwater is attributed to the fact that an unfiltered sample was collected from a TWP. However, the groundwater samples collected from TWPs are considered to be more representative of conditions to be encountered during construction activities.

Based on the results of the field investigation and laboratory analytical results, LiRo recommends the following:

- The Contract documents should identify provisions and a contingency for managing, handling, transporting, and disposing of non-hazardous contaminated soil. The Contractor should be required to submit a Material Handling Plan, to identify the specific protocol and procedures that will be employed to manage the waste in accordance with applicable regulations;

- Due to the presence of SVOC and metals concentrations above the Unrestricted Use (Track 1) and Restricted Use (Track 2) SCOs, dust control procedures are recommended during excavation activities to minimize the creation and dispersion of fugitive airborne dust. The Contractor may implement dust control measures to minimize potential airborne contaminants released as a direct result of construction activities. A Community Air Monitoring Plan (CAMP) shall be developed in accordance with NYSDEC DER-10 Requirements. The CAMP requires real-time monitoring for VOCs and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is intended to provide a measure of protection for the downwind community from potential airborne contaminant releases as a direct result of investigative and remedial work activities. Specific requirements shall be reviewed for each situation in consultation with NYSDOH to ensure proper applicability;

- Dewatering may be necessary during construction activities within the Corridor. Since TSS was detected in the groundwater sample at a concentration exceeding the NYCDEP Sewer Discharge Limitations, groundwater may require pre-treatment prior to discharge. Therefore, if dewatering to a sanitary or combined sewer will be performed, the contractor may be required to obtain a NYCDEP sewer discharge permit.

- Before beginning any excavation activity, the contractor shall submit a site-specific health and safety plan (HASP) that will meet the requirements set forth by the Occupational, Safety, and Health Administration (OSHA), the New York State Department of Health (NYSDOH), and any other applicable regulations. The HASP should identify the locations and risks associated with the potential contaminants that may be encountered, and the administrative and engineering controls that will be utilized to mitigate concerns (i.e., dust control procedures for SVOCs and metals).

1.0 INTRODUCTION

On behalf of the New York City Department of Design and Construction (NYCDDC), LiRo Engineers, Inc. (LiRo) conducted a Phase II Subsurface Corridor Investigation (SCI) of the Eastchester Bay Crossing of City Island Bridge, Bronx, NY (hereinafter referred to as the Corridor). The Corridor consists of the City Island Bridge bounded by City Island Avenue and City Island Road and is located within the City Island neighborhood of Bronx, New York. Infrastructure improvements, consisting of the installation of two new 20 inch sub aqueous water mains to City Island and temporary relocation of the City Island Bridge, are proposed for the Corridor. The SCI was conducted to determine if the Corridor's environmental condition might impact proposed construction activities.

1.1 Summary of Previous Environmental Investigations

LiRo prepared a Phase I Corridor Assessment Report (CAR) dated August 22, 2011, which presented the results of a survey conducted along the Corridor to assess the presence of potential sources of subsurface contamination within the immediate vicinity of the Corridor. The survey also included a review of fire insurance maps to document historical use and a limited review of the New York State databases to identify sites that are known to be contaminated.

The CAR identified zero (0) sites that had a Final "High" risk and one (1) site that had a Final "Moderate" risk to impact the subsurface of the Corridor and recommended advancing a total of two (2) borings, installing one (1) temporary well point, and collecting soil and groundwater samples to assess potential impacts.

The final "Moderate" risk site identified in the LiRo CAR is listed below.

MODERATE RISK SITES

1) Boat Sales, 632 City Island Avenue, Bronx, New York (Moderate Risk Site No. 1) – **SB-01 and SB-02**

1.2 Scope of Work

The SCI consisted of a field investigation, laboratory analyses, and the preparation of this report, which includes tables summarizing the laboratory analytical results and figures depicting boring locations, significant site features and, if applicable, contamination occurrence and distribution. Drilling activities for the field investigation were performed by Aquifer Drilling and Testing, Inc. (ADT) of Mineola, NY. Oversight of drilling activities was performed by LiRo. Laboratory analyses were provided by Chemtech of Mountainside, New Jersey, a NYS Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP)-certified laboratory (ELAP Certification No. 11376). Field derived Quality Assurance/Quality Control samples (i.e., field blanks, trip blanks, duplicates) were not collected for this project. The field investigation was conducted on June 1, 2012 and consisted of the following components:

- The advancement of two (2) borings (SB-01 and SB-02) to a depth of 20 feet below ground surface (ftbg) or refusal, whichever was encountered first. The borings were advanced using a Geoprobe direct push drill rig. Prior to direct push advancement, borings were cleared to a depth of six (6) feet using a hand auger, a vacuum excavator (Vacex), and an air knife. Soil samples were collected using 5-foot long, 2-inch diameter Macro Core stainless steel samplers equipped with polyvinyl chloride (PVC) liners. In addition, a site specific Health and Safety Plan was prepared prior to commencing field work;

- Field screening, classification and identification of soils from the ground surface to the bottom of each boring. Soil samples were visually classified in the field using the Unified Soil Classification System (USCS). Field screening consisted of visual and olfactory indicators of impacts as well as screening with a photoionization detector (PID);

- The collection of one (1) composite and one (1) grab sample from each of the two (2) soil borings identified as "Moderate" risk boring locations (SB-01 and SB-02). The composite soil samples were comprised of soil from the entire boring column. The grab samples were collected from the 6-inch interval exhibiting evidence of petroleum impacts (highest PID reading) or from the bottom 6-inch interval in each boring.

- Laboratory analysis of the composite soil samples for: (1) Target Compound List (TCL) Base Neutral/Acid (BN/A) extractable semi-volatile organic compounds (SVOCs) by United States Environmental Protection Agency (USEPA) Method 8270; (2) Target Analyte List (TAL) metals by USEPA Method 6010B/7010; (3) TCL pesticides by USEPA Method 8081A; (4) Herbicides via USEPA Method 8151A; and, (5) TCL polychlorinated biphenyls (PCBs) by USEPA Method 8082.

- Laboratory analysis of the grab samples for TCL volatile organic compounds (VOCs) by USEPA Method 8260.

- The installation of one (1) temporary well point (TWP) in boring SB-01, and the collection of one (1) groundwater sample from the TWP using direct push technology by installing a slotted PVC screen perpendicular to the groundwater table and riser pipe to grade. A Peristaltic pump and polyethylene tubing were deployed in the TWP to extract the groundwater sample.

- Laboratory analysis of the groundwater sample for the parameters published by the New York City Department of Environmental Protection (NYCDEP) as Limitations for Effluent to Sanitary or Combined Sewers (NYCDEP Sewer Discharge Criteria).

- The collection of one (1) composite waste characterization (WC) sample identified as WC-1. WC-1 was a composite of soil aliquots from borings SB-01 and SB-02 (grade to bottom);

- Laboratory analysis of the waste characterization samples for: (a) Full Toxicity Characteristics Leaching Procedure (TCLP) by USEPA Method SW846; (b) Resource Conservation and Recovery Act (RCRA) Characteristics (ignitability, reactivity, and corrosivity) by USEPA Method SW846; and, (c) Total Petroleum Hydrocarbons Diesel Range Organics/Gasoline Range Organics (TPHC DRO/GRO) by USEPA Method 8015B.

2.0 CORRIDOR INFORMATION

2.1 Corridor Location, Description, and Use

The Corridor consists of the City Island Bridge bounded by City Island Avenue and City Island Road within the City Island neighborhood of Bronx, New York. The Corridor consists of the Eastchester Bay Crossing of City Island Bridge. The location is shown on Figure 1. The Corridor segment is characterized primarily by commercial and residential uses. The typical commercial uses include boat yards/marinas and church structures.

One (1) specific property of concern was identified along the Corridor as a result of the CAR findings which was identified as a boat sales facility at 632 City Island Avenue. During the SCI, no evidence of impacts as a result of this facility were identified.

2.2 Description of Surrounding Properties

The Corridor is primarily surrounded by residential and commercial structures. As indicated above, the surrounding commercial uses include various boat yards/marinas and church structures. In addition, wetlands identified through the National Wetland Inventory are located on both sides of the City Island Bridge.

2.3 Corridor and Regional Topographic Setting

Based on a review of the United States Geological Survey (USGS.) 7.5-Minute Quadrangle Map, Flushing, New York, dated 1979, the elevation of the Corridor is approximately five (5) to 15 feet above mean sea level (MSL). The topography of the immediate Corridor area includes a downward slope toward Eastchester Bay. A copy of the topographic map is presented in Figure 1.

2.4 Corridor and Regional Geology

Site and Regional Geology and Hydrogeology are based on information provided in the Geologic Map of New York State (Lower Hudson Sheet) and the USGS "Hydrogeologic Framework of Long Island, New York." Based on those sources, the area's geology is underlain by high grade metamorphic bedrock consisting of a sequence of Cambrian and Ordovician gneiss, schistose-gneiss, and marble. Bedrock is extensively exposed on the west side and northern quarter of Bronx County and less exposed southeast towards Hunts Point and Throgs Neck.

The geologic contacts display a series of northwest trending folds. The northwest trending folds have resulted in a series of northwest trending valleys and ridges. The bedrock is also characterized by numerous steeply dipping northwest-southeast trending normal and reverse faults many of which are transmissive and contain groundwater.

Pleistocene glacial and glaciofluvial sediments as well as recent river, alluvium, and salt marsh deposits overly the bedrock. Glacial till in the south Bronx varies in thickness from less than five (5) feet to over 100 feet and averages about 25 feet. Inter-bedded lake bed sediments are usually encountered in the south Bronx along the Harlem River Valley and the Bronx shore inland to Sedgwick Avenue at approximately 20 feet below grade surface (ftbg). Thickness of these sediments ranges from seven (7) to

20 feet. They are generally underlain by stratified sand, clay, and gravel, also with a thickness of seven (7) to 20 feet. The glacial tills underlying these lakebed sediments generally overlie eroded and decomposed bedrock. The depth to bedrock is expected to be 30 to 50 feet in the corridor area. Bedrock was not encountered during the subsurface investigation.

In places, deep valleys were gouged out of the Bronx by glacial activity. These valleys were subsequently filled with organic material and other glacial sediments. In many places in the Bronx, as much as 30 feet of artificial fill material (construction and demolition debris mixed with sand, gravel, rock, and cinders) overlies Holocene salt marsh and alluvial deposits, Pleistocene glacial drift, or bedrock.

The subsurface soils encountered during this SCI from grade to 20 ftbg consisted of fill comprised of medium to fine SAND with some ash, gravel, and rocks. The fill is underlain by reddish brown SAND in soil boring SB-01 at a depth of 17 to 20 ft bgs. Man-made materials (i.e., ash), which are indicative of urban fill, were encountered throughout the Corridor at depths ranging from grade to 20 ftbg. Groundwater was encountered at approximately ten (10) ftbg within SB-01 and 16 ftbg within SB-02.

2.5 Corridor and Regional Hydrogeology

Groundwater is present within the unconsolidated sediments and generally occurs from ten (10) to 20 ftbg near coastal areas. Groundwater also occurs in bedrock within secondary permeability zones such as fractures, faults, and foliation planes. In the region of the Inwood Marble, north of Manhattan, a karst aquifer exists, with groundwater occurring in dissolution fractures and voids within the marble. In general, regional groundwater flow direction is controlled by regional topography with groundwater flow from higher to lower elevations. Groundwater flow within the Corridor and in the surrounding area is anticipated to flow to the west on the City Island side of the bridge and to the east on the Pelham Bay Park side of the bridge. It should be noted that the bridge foundation may affect the groundwater flow within the immediate area.

Along the Harlem River, Hudson River, and Long Island Sound, groundwater elevations and flow can be tidally influenced, resulting in groundwater elevation fluctuations and deflections in flow direction. The nearest surface water body is Eastchester Bay located beneath the City Island Bridge, which is the Corridor.

Based upon the findings of the SCI, depth to groundwater within the Corridor ranged from approximately ten (10) ftbg within SB-01 to 16 ftbg within SB-02. SB-02 is higher in elevation than SB-01. Groundwater is anticipated to flow toward Eastchester Bay. Tidal fluctuation in this area may periodically affect groundwater flow. Estimated groundwater levels and/or flow direction(s) may also vary due to seasonal fluctuations in precipitation, local usage demands, geology, underground structures, or dewatering operations.

3.0 CORRIDOR EVALUATION

Proposed construction activities at this site include soil excavation and may include dewatering, which in-turn requires that soils and groundwater at the site be characterized to identify material handling requirements (i.e., use of protective equipment) and for material reuse, handling, and/or waste disposal requirements. LiRo provided oversight for the advancement of two (2) soil borings, the installation of one (1) temporary well point (TWP), and the collection of soil and groundwater samples during the field investigation at the designated areas in the vicinity of the planned construction. The soil and groundwater samples from the borings and TWP were transferred into laboratory supplied sample jars and properly labeled. The samples were stored with ice in a cooler to preserve the samples at 4° Celsius prior to and during shipment. A chain-of-custody was prepared, prior to sample shipment. A summary of the field observations, including the location of the sites and the details of the soil borings, is provided in Table 1.

3.1 Soil Quality Investigation

Two (2) borings (SB-01 and SB-02) were advanced to a depth of 20 ftbg, or refusal, whichever was encountered first, using a Geoprobe direct push drill rig by ADT of Mineola, New York. Prior to direct push advancement, borings were cleared to a depth of six (6) ftbg using a hand auger, a vacuum excavator, and an air knife. Soil samples were collected using 5-foot long, 2-inch diameter Macro Core stainless steel samplers equipped with polyvinyl chloride (PVC) liners. Soil boring locations are shown on Figure 2. The designations and sampling intervals for the samples that were submitted to the laboratory are included in Table 1. Maps depicting each boring location are included in Appendix A. Boring logs are provided in Appendix B. The locations of each boring are described below:

- **SB-01** – Advanced in the vicinity of "Moderate" risk site No. 1 and located on City Island Avenue, two (2) feet from the street curb and 10 feet south of the lamp post closest to the bridge.

- **SB-02** – Advanced in the vicinity of "Moderate" risk site No. 1 and located on City Island Avenue, four (4) feet from the street curb and 13 feet from the lamp post at the bend in the road.

Soil from each boring was classified and examined for visual evidence (i.e., staining, discoloration) and any olfactory indications (i.e., odors) of contamination. Continuous soil samples were collected from each of the borings at 5-foot intervals. Upon sample retrieval, the soils were examined for visual evidence (i.e., staining, discoloration) and any olfactory indications (i.e., odors) of contamination. In addition, a PID was used to screen the soil for VOC vapor concentrations.

In order to identify representative conditions relative to the presence of SVOCs, metals, pesticides, herbicides, and PCBs over the entire soil column in each boring, composite soil samples were collected by mixing the soil from the entire column in a stainless steel bowl. Boring composite soil samples were collected from each of the two (2) "Moderate" risk borings (SB-01 and SB-02).

In order to identify representative conditions relative to the presence of VOCs, grab soil samples were collected from zero (0) to six (6) inches above the water table in borings SB-01 and SB-02.

In order to identify representative conditions for disposal purposes, one (1) waste classification (WC) sample was collected as follows:

- WC-1: composited of soil from borings SB-01 and SB-02 (grade to bottom).

Soil classification information, including stratigraphy, is documented on the boring logs included in Appendix B. All boring equipment was cleaned by being rinsed with tap water, scrubbed with Alconox, then rinsed with deionized water again between each sample interval. In addition, a clear plastic liner was used inside the sampler for neat recovery of the soil cores. Following the completion of each boring, the boreholes were back-filled with drill cuttings, and then sealed with cement grout or asphalt, as appropriate.

3.2 Groundwater Quality Investigation

As groundwater may be encountered within the depths associated with the future excavation, one (1) groundwater sample was collected for screening and laboratory analysis during the soil boring activities. One (1) TWP was installed in soil boring SB-01. Groundwater was encountered at approximately ten (10) ftbg within SB-01 and 16 ftbg within SB-02. For the installation of the TWP, the Geoprobe unit was advanced to a depth of 20 ftbg, approximately ten (10) feet into the encountered water table. The TWPs consisted of a 20-foot length section of one-inch diameter schedule 40 PVC screen and riser. A groundwater sample was collected from the TWP for screening and laboratory analysis via a Peristaltic pump and polyethylene tubing. All tubing was new, clean, and unused and was properly disposed after use. Upon extraction, the samples were examined for visual evidence (i.e., discoloration, sheen) and any olfactory indications (i.e., odors) of contamination were noted.

A summary of the measurements taken from the TWP is provided in Appendix B. The location of the TWP is provided in Figure 2.

3.3 Laboratory Analyses

The soil and groundwater samples were submitted to Chemtech of Mountainside, New Jersey, a NYSDOH approved laboratory (No. 11376). Field derived Quality Assurance/Quality Control samples (i.e., field blank, trip blank, duplicate) were not collected for this project. Laboratory analytical reports are included in Appendix C.

The grab soil samples were analyzed for USEPA TCL VOCs by Method 8260. The boring composite soil samples were analyzed for: (1) TCL BN/A extractable SVOCs by USEPA Method 8270; (2) TAL metals by USEPA Method 6010B/7010; (3) TCL pesticides by USEPA Method 8081A; (4) Herbicides via USEPA Method 8151A; and, (5) TCL PCBs by USEPA Method 8082.

The waste characterization soil sample was analyzed for: (1) the USEPA Full Toxicity Characteristics Leaching Procedure (TCLP) parameters; (2) the Resource Conservation and Recovery Act (RCRA) Characteristics (ignitability, reactivity, and corrosivity); and, (3) Total Petroleum Hydrocarbons Diesel Range Organics/Gasoline Range Organics (TPHC DRO/GRO).

The groundwater sample was analyzed for parameters published by NYCDEP as Limitations for Effluent to Sanitary or Combined Sewers.

3.4 Data Evaluation

In order to evaluate the subsurface soil quality, the laboratory analytical results of the grab and composite soil samples were compared with the regulatory standards identified in: (1) NYSDEC Subpart 375-6: Remedial Program Unrestricted and Restricted Use (Track 1 and Track 2) Soil Cleanup Objectives (SCOs); and, (2) NYSDEC CP-51 Supplemental Soil Cleanup Objectives (SSCOs). The laboratory analytical results of the waste classification soil sample was compared with the Toxicity Characteristic Regulatory Levels for Hazardous Waste published in RCRA and NYSDEC Part 371. The analytical results of the groundwater sample was compared to the NYCDEP Sewer Discharge Criteria.

4.0 FINDINGS

This section discusses the analytical data and findings for the activities discussed in Section 3.0. Boring logs and well installation records can be found in Appendix B. Complete analytical data reports are included in Appendix C.

4.1 Field Screening

No elevated PID readings, petroleum odors, or visual evidence of staining was noted during the subsurface investigation. Refer to Table 1 for a summary of environmental boring data.

4.2 Soil and Groundwater Laboratory Analytical Results

4.2.1 Volatile Organic Compounds (VOCs) in Soil

In both of the grab soil samples collected, no VOCs were detected. Refer to Table 2.

4.2.2 Semi-Volatile Organic Compounds (SVOCs) in Soil

In both of the composite soil samples collected, SVOCs were detected. Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene were detected at concentrations exceeding Unrestricted Use (Track 1) and Restricted Use (Track 2) SCOs in at least one of the samples collected (i.e., COMP-SB-01 and COMP-SB-02). The detected SVOCs are polycyclic aromatic hydrocarbons (PAHs) and are likely attributed to historic fill material placed at the Site. Refer to Table 3 for a summary of TCL SVOC detections.

4.2.3 Target Analyte List Metals (TAL Metals) in Soil

In both of the composite soil samples collected, metals were detected. Copper, iron, lead, mercury, and zinc were detected above Unrestricted Use (Track 1) SCOs and/or NYSDEC SSCOs in at least one (1) of the two (2) composite soil samples collected. Some of the detected concentrations are attributed to background levels. However, some of the detected concentrations for mercury and copper may be attributed to contaminants in historic fill material placed throughout the Corridor. Refer to Table 4 for a summary of TAL metals detections.

4.2.4 Pesticides in Soil

In one (1) of the two (2) composite soil samples collected, one (1) pesticide (4,4'-DDT) was detected. 4,4'-DDT was detected in sample COMP-SB-01 at a concentration that exceeds the Unrestricted Use (Track 1) SCO. This detection may be attributed to contaminants in historic fill material placed throughout the Corridor. Refer to Table 5 for a summary of pesticide detections.

4.2.5 Herbicides in Soil

In both of the composite soil samples collected, no herbicides were detected. Refer to Table 6.

4.2.6 PCBs in Soil

In both of the composite soil samples collected, no PCBs were detected. Refer to Table 7.

4.2.7 Waste Classification of Soil

Ignitability (flash point), reactivity (cyanide and sulfide), and corrosivity (pH) were within the acceptable RCRA ranges. TCLP VOCs, SVOCs, herbicides, pesticides, and PCBs were not detected in the one (1) waste classification soil sample (WSTCOMP-01). While one (1) metal, barium, was detected, it was well below the 6 NYCRR Part 371 or RCRA regulatory levels.

TPHC DRO was detected at 92,692 ug/kg and GRO was detected at 25.5 ug/kg. There are no regulatory standards for DRO and GRO. Analytical results should be compared to levels acceptable by the chosen receiving facility to determine appropriate waste classification prior to off-site disposal. Refer to Table 8 for a summary of TCLP parameters, RCRA characteristics, and DRO/GRO results.

4.2.8 Analysis of NYCDEP Parameters in Groundwater

One (1) groundwater sample (GW-01) was analyzed for the parameters required by the NYCDEP Limitations for Effluent to Sanitary or Combined Sewers (Daily Limit). Total Suspended Solids (TSS) was detected at a concentration of 420 milligrams per liter (mg/L); this concentration exceeds the NYCDEP Sewer Discharge Limitation of 350 mg/L. The presence of TSS in the groundwater is attributed to the fact that an unfiltered sample was collected from a TWP and not a permanent monitoring well. However, the groundwater sample collected from a TWP is considered to be more representative of conditions to be encountered during construction activities.

Based on the results for TSS listed above, groundwater does not meet NYCDEP Sewer Discharge Criteria and may require pre-treatment prior to discharge. Refer to Table 9 for a summary of selected NYCDEP parameters in groundwater.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the evaluation of the field screening data and the laboratory analytical results, and a comparison to applicable regulatory standards, the following conclusions are presented:

- Field screening did not identify any elevated PID readings, petroleum odors, or visual evidence of staining during the subsurface investigation;

- Field screening and laboratory analytical results did not identify petroleum-impacted soils within the Corridor. While elevated concentrations of SVOCs, metals, and pesticides were detected within the subsurface soils within the Corridor, this is likely attributed to: (a) contaminants in historic fill material placed on the Corridor; and/or, (c) natural background levels (metals);

- The subsurface soils did not exhibit hazardous waste characteristics; and,

- The groundwater sample contained concentrations of TSS that exceeded the NYCDEP Sewer Discharge Criteria. The presence of elevated levels of TSS in the groundwater is attributed to the fact that an unfiltered sample was collected from a TWP. However, the groundwater samples collected from TWPs are considered to be more representative of conditions to be encountered during construction activities.

Based on the results of the field investigation and laboratory analytical results, LiRo recommends the following:

- The Contract documents should identify provisions and a contingency for managing, handling, transporting, and disposing of non-hazardous contaminated soil. The Contractor should be required to submit a Material Handling Plan, to identify the specific protocol and procedures that will be employed to manage the waste in accordance with applicable regulations;

- Due to the presence of SVOC and metals concentrations above the Unrestricted Use (Track 1) and Restricted Use (Track 2) SCOs, dust control procedures are recommended during excavation activities to minimize the creation and dispersion of fugitive airborne dust. The Contractor may implement dust control measures to minimize potential airborne contaminants released as a direct result of construction activities. A Community Air Monitoring Plan (CAMP) shall be developed in accordance with NYSDEC DER-10 Requirements. The CAMP requires real-time monitoring for VOCs and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is intended to provide a measure of protection for the downwind community from potential airborne contaminant releases as a direct result of investigative and remedial work activities. Specific requirements shall be reviewed for each situation in consultation with NYSDOH to ensure proper applicability;

- Dewatering may be necessary during construction activities within the Corridor. Since TSS was detected in the groundwater sample at a concentration exceeding the NYCDEP Sewer Discharge Limitations, groundwater may require pre-treatment prior to discharge. Therefore, if dewatering to a sanitary or combined sewer will be performed, the contractor may be required to obtain NYCDEP sewer discharge permit.

- Before beginning any excavation activity, the contractor shall submit a site-specific health and safety plan (HASP) that will meet the requirements set forth by the Occupational, Safety, and Health

Administration (OSHA), the New York State Department of Health (NYSDOH), and any other applicable regulations. The HASP should identify the locations and risks associated with the potential contaminants that may be encountered, and the administrative and engineering controls that will be utilized to mitigate concerns (i.e., dust control procedures for SVOCs and metals).

6.0 STATEMENT OF LIMITATIONS

The data presented and the opinions expressed in this report are qualified as stated in the attachment to this section of the report.

Prepared By:
LiRo Engineers, Inc.

Amy Hewson
Senior Environmental Analyst

Report Reviewed By:

Thomas Fralick
Senior Geologist

Report Reviewed By:

Robert Kreuzer
Project Manager

STATEMENT OF LIMITATIONS

The data presented and the opinions expressed in this report are qualified as follows:

The sole purpose of the investigation and of this report is to assess the physical characteristics of the Site with respect to the presence or absence in the environment of oil or hazardous materials and substances as defined in the applicable state and federal environmental laws and regulations and to gather information regarding current and past environmental conditions at the Site.

LiRo derived the data in this report primarily from visual inspections, examination of records in the public domain, interviews with individuals with information about the Site, and a limited number of subsurface explorations made on the dates indicated. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration at the Site, analysis of the data, and reevaluation of the findings, observations, and conclusions expressed in the report.

In preparing this report, LiRo has relied upon and presumed accurate certain information (or the absence thereof) about the Site and adjacent properties provided by governmental officials and agencies, the Client, and others identified herein. Except as otherwise stated in the report, LiRo has not attempted to verify the accuracy or completeness of any such information.

The data reported and the findings, observations, and conclusions expressed in the report are limited by the Scope of Services, including the extent of subsurface exploration and other tests. The Scope of Services was defined by the requests of the Client, the time and budgetary constraints imposed by the Client, and the availability of access to the Site.

Because of the limitations stated above, the findings, observations, and conclusions expressed by LiRo in this report are not, and should not be considered, an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state or local law or regulation. No warranty or guarantee, whether express or implied, is made with respect to the data reported or findings, observations, and conclusions expressed in this report. Further, such data, findings, observations, and conclusions are based solely upon site conditions in existence at the time of investigation.

This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the Agreement and the provisions thereof.

TABLES

TABLE 1 – SUMMARY OF FIELD INVESTIGATION

TABLE 2 – SUMMARY OF TCL VOCs DETECTED IN SOIL

TABLE 3 – SUMMARY OF TCL SVOCs DETECTED IN SOIL

TABLE 4 – SUMMARY OF TAL METALS DETECTED IN SOIL

TABLE 5 – SUMMARY OF PESTICIDES DETECTED IN SOIL

TABLE 6 – SUMMARY OF HERBICIDESDETECTED IN SOIL

TABLE 7 –SUMMARY OF PCBs DETECTED IN SOIL

TABLE 8 –SUMMARY OF WASTE CHARACTERIZATION IN SOIL

TABLE 9 – SUMMARY OF GROUNDWATER QUALITY COMPARED TO NYC DEP

Table 1. Summary of Environmental Boring Data
Phase II Subsurface Corridor Investigation for New 20" Sub Aqueous Water Main to City Island
Eastchester Bay Crossing - City Island Bridge, Bronx, New York

Boring No.	Sample ID	PID (ppm)	Sample Interval (ft bgs)	Total VOCs	Total SVOCs (ug/kg)	Metals Exceed (Yes/No)[1]	Total PCBs	Herbicides Exceed (Yes/No)	Total Pesticide (ug/kg)	Depth to Water (ft bgs)	Total Depth (ft bgs)	Other Comments
SB-01	SB-01-9.5-10	<1	9.5-10	ND	NA	NA	NA	NA	NA	10	20	No petroleum odors or elevated PID readings.
SB-01	COMP-SB-01	<1	Composite	NA	36,190	Yes	ND	ND	77.0	10	20	No petroleum odors or elevated PID readings.
SB-02	SB-02-15.5-16	<1	15.5-16	ND	NA	NA	NA	NA	NA	16	16	No petroleum odors or elevated PID readings.
SB-02	COMP-SB-02	<1	Composite	NA	76,730	Yes	ND	ND	ND	16	16	No petroleum odors or elevated PID readings.

Notes:
1. Metal(s) exceeds CP-51 SSCOs/SCLs, Unrestricted Use (Track 1) SCOs, and/or Restricted Residential Use (Track 2) SCOs.
All soil samples were analyzed for Target Compound List (TCL) Semi-Volatile Organic Compounds (SVOCs), Pesticdes, PCBs, Herbicides, and Target Analyte List (TAL) Metals.
All soil samples were analyzed for Target Compound List (TCL) Semi-Volatile Organic Compounds (SVOCs), Pesticdes, PCBs, Herbicides, and Target Analyte List (TAL) Metals.
NA = Not Analyzed/Not Applicable
ND = Non detect
ft bgs = feet below grade surface
ppm = parts per million (or mg/kg)
mg/kg = milligram per kilogram

HAZ-57

Table 2. Summary of Target Compound List (TCL) Volatile Organic Compounds (VOCs) Detected in Soil
Phase II Subsurface Corridor Investigation for New 20" Sub Aqueous Water Main to City Island
Eastchester Bay Crossing - City Island Bridge, Bronx, New York

TCL VOC	Part 375-6.8 (a) Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Part 375-6.8 (b) Restricted Use (Track 2) Residential Soil Cleanup Objectives (SCOs)	CP-51 Supplemental Soil Cleanup Objectives (SSCOs) - Residential	Sample ID, Date Collect, and Depth (ft bgs)	
				SB-01-9.5-10	SB-02-15.5-16
				6/1/2012	6/1/2012
				9.5-10	15.5-16
Total VOCs	NS	NS	NS	ND	ND

Notes:
All concentrations are reported in parts per billion (ppb or ug/kg)
ft bgs = feet below grade surface
NS = No Standard
ND = Non-detect
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006).
CP-51 SSCOs = New York State Department of Environmental Conservation (NYSDEC) CP-51 – Soil Cleanup Guidance (CP-51) (October 21, 2010).

BOLD = Concentration exceeds NYSDEC CP-51 SSCOs
Shading = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives
Italicized = Concentration exceeds Restricted Use (Track 2) Residential Soil Cleanup Objectives

HAZ-58

Table 3. Summary of Target Compound List (TCL) Semi-Volatile Organic Compounds (SVOCs) Detected in Soil
Phase II Subsurface Corridor Investigation for New 20" Sub Aqueous Water Main to City Island
Eastchester Bay Crossing - City Island Bridge, Bronx, New York

TCL SVOC	Part 375-6.8 (a) Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Part 375-6.8 (b) Restricted Use (Track 2) Residential Soil Cleanup Objectives (SCOs)	CP-51 Supplemental Soil Cleanup Objectives (SSCOs) - Residential	Sample ID, Date Collect and Depth (ft bgs)	
				COMP-SB-01 6/1/2012 Composite	COMP-SB-02 6/1/2012 Composite
Acenaphthene	20,000	100,000	NS	ND	740 J
Anthracene	100,000	100,000	NS	1,300	2,400
Benzo(a)anthracene	1,000	1,000	NS	*3,100*	*6,100*
Benzo(a)pyrene	1,000	1,000	NS	*2,600*	*5,000*
Benzo(b)fluoranthene	1,000	1,000	NS	*3,600*	*6,900*
Benzo(g,h,i)perylene	100,000	100,000	NS	1,300	2,500
Benzo(k)fluoranthene	800	1,000	NS	*1,400*	*2,600*
Carbazole	NS	NS	NS	490 J	1,100
Chrysene	1,000	1,000	NS	*3,200*	*6,300*
Dibenz[a,h]anthracene	330	330	NS	ND	*480 J*
Dibenzofuran	NS	NS	NS	ND	500 J
Dimethylphthalate	NS	NS	100,000	910 J	920 J
Flouranthene	100,000	100,000	NS	6,200	14,000 D
Fluorene	30,000	100,000	NS	490 J	890 J
Indeno(1,2,3-cd)pyrene	500	500	NS	*1,100 J*	*2,300*
Phenanthrene	100,000	100,000	NS	4,700	10,000 D
Pyrene	100,000	100,000	NS	5,800	14,000 D
Total SVOCs	NS	NS	NS	36,190	76,730

Notes:
All concentrations are reported in parts per billion (ppb or ug/kg)
ft bgs = feet below grade surface
ND = Compound not detected above method detection limit (see attached lab report for mdl's)
NS = No Standard
J = Compound detected below the quantitation limit

SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006).
CP-51 SSCOs =. New York State Department of Environmental Conservation (NYSDEC) CP-51 – Soil Cleanup Guidance (CP-51) (October 21, 2010).

BOLD = Concentration exceeds NYSDEC CP-51 SSCOs
Shading = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives
Italicized = Concentration exceeds Restricted Use (Track 2) Residential Soil Cleanup Objectives

Table 4. Summary of Target Analyte List (TAL) Metals Detected in Soil
Phase II Subsurface Corridor Investigation for New 20" Sub Aqueous Water Main to City Island
Eastchester Bay Crossing - City Island Bridge, Bronx, New York

Target Analyte List Metal	Part 375-6.8 (a) Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Part 375-6.8 (b) Restricted Use (Track 2) Residential Soil Cleanup Objectives (SCOs)	CP-51 Supplemental Soil Cleanup Objectives (SSCOs) - Residential	Sample ID, Date Collect and Depth (ft bgs)	
				COMP-SB-01	COMP-SB-02
				6/1/2012	6/1/2012
				Composite	Composite
Aluminum	NS	NS	NS	7,860	5,500
Antimony	NS	NS	NS	1.01 J	1.14 J
Arsenic	13	16	NS	4.94	3.25
Barium	350	350	NS	66.6	48.4
Beryllium	7.2	14	NS	0.29	0.15 J
Calcium	NS	NS	NS	1,120	5,650
Chromium (total)	30	36	NS	17.6	13.4
Cobalt	NS	NS	30	6.66	7.3
Copper	50	270	NS	27.4	51.5
Iron	NS	NS	2,000	**12,900**	**13,400**
Lead	63	400	NS	165	122
Magnesium	NS	NS	NS	2,710	4,110
Manganese	1,600	2,000	NS	195	283
Mercury	0.18	0.81	NS	0.692 D	0.375*
Nickel	30	140	NS	21.4	23.8
Potassium	NS	NS	NS	1,840	1,960
Sodium	NS	NS	NS	638	266
Vanadium	NS	NS	100	24.3	34.7
Zinc	109	2,200	NS	133	74.2

Notes:
All concentrations are in parts per million (ppm or mg/kg)
ft bgs = feet below grade surface
NS = No Standard
J = Compound detected below the quantitation limit
D = Dilution
* = Duplicate analysis not within control limits
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006).
CP-51 SSCOs = New York State Department of Environmental Conservation (NYSDEC) CP-51 – Soil Cleanup Guidance (CP-51) (October 21, 2010).

BOLD = Concentration exceeds NYSDEC CP-51 SSCOs
Shading = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives
Italicized = Concentration exceeds Restricted Use (Track 2) Residential Soil Cleanup Objectives

Table 5. Summary of Pesticides Detected in Soil
Phase II Subsurface Corridor Investigation for New 20" Sub Aqueous Water Main to City Island
Eastchester Bay Crossing - City Island Bridge, Bronx, New York

Pesticides	Part 375-6.8 (a) Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Part 375-6.8 (b) Restricted Use (Track 2) Residential Soil Cleanup Objectives (SCOs)	CP-51 Supplemental Soil Cleanup Objectives (SSCOs) - Residential	Sample ID, Date Collect and Depth (ft bgs)	
				COMP-SB-01	COMP-SB-02
				6/1/2012	6/1/2012
				Composite	Composite
4,4'-DDT	3.3	1,700	NS	77 P	ND
Total Pesticides	NS	NS	NS	77	ND

Notes:
All concentrations are reported in parts per billion (ppb or ug/kg)
ft bgs = feet below grade surface
ND = Compound not detected above method detection limit (see attached lab report for mdl's)
NS = No Standard
P = This flag is used for pesticide and Aroclor target compounds when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported and flagged with a "P". The "P" flag is not used unless a compound is identified on both columns.
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006).
CP-51 SSCOs = New York State Department of Environmental Conservation (NYSDEC) CP-51 – Soil Cleanup Guidance (CP-51) (October 21, 2010).

BOLD = Concentration exceeds NYSDEC CP-51 SSCOs
Shading = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives
Italicized = Concentration exceeds Restricted Use (Track 2) Residential Soil Cleanup Objectives

HAZ-61

Table 6. Summary of Herbicides Detected in Soil
Phase II Subsurface Corridor Investigation for New 20" Sub Aqueous Water Main to City Island
Eastchester Bay Crossing - City Island Bridge, Bronx, New York

Herbicides	Part 375-6.8 (a) Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Part 375-6.8 (b) Restricted Use (Track 2) Residential Soil Cleanup Objectives (SCOs)	CP-51 Supplemental Soil Cleanup Objectives (SSCOs) - Residential	Sample ID, Date Collect and Depth (ft bgs)	
				COMP-SB-01	COMP-SB-02
				6/1/2012	6/1/2012
				Composite	Composite
Herbicides	NS	NS	NS	ND	ND

Notes:
All concentrations are reported in parts per billion (ppb or ug/kg)
ft bgs = feet below grade surface
NS = No Standard
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006).
CP-51 SSCOs = New York State Department of Environmental Conservation (NYSDEC) CP-51 – Soil Cleanup Guidance (CP-51) (October 21, 2010).

BOLD = Concentration exceeds NYSDEC CP-51 SSCOs
Shading = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives
Italicized = Concentration exceeds Restricted Use (Track 2) Residential Soil Cleanup Objectives

HAZ-62

Table 7. Summary of Polychlorinated Biphenyls (PCBs) Detected in Soil
Phase II Subsurface Corridor Investigation for New 20" Sub Aqueous Water Main to City Island
Eastchester Bay Crossing - City Island Bridge, Bronx, New York

PCBs	Part 375-6.8 (a) Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs)	Part 375-6.8 (b) Restricted Use (Track 2) Residential Soil Cleanup Objectives (SCOs)	CP-51 Supplemental Soil Cleanup Objectives (SSCOs) - Residential	Sample ID, Date Collect and Depth (ft bgs)	
				COMP-SB-01	COMP-SB-02
				6/1/2012	6/1/2012
				Composite	Composite
Total PCBs	100	1,000	NS	ND	ND

Notes:
All concentrations are reported in parts per billion (ppb or ug/kg)
ft bgs = feet below grade surface
ND = Compound not detected above method detection limit (see attached lab report for mdl's)
NS = No Standard
SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006).
CP-51 SSCOs = New York State Department of Environmental Conservation (NYSDEC) CP-51 – Soil Cleanup Guidance (CP-51) (October 21, 2010).

BOLD = Concentration exceeds NYSDEC CP-51 SSCOs
Shading = Concentration exceeds Unrestricted Use (Track 1) Soil Cleanup Objectives
Italicized = Concentration exceeds Restricted Use (Track 2) Residential Soil Cleanup Objectives

HAZ-63

Table 8. Summary of Waste Characterization in Soil
Phase II Subsurface Corridor Investigation for New 20" Sub Aqueous Water Main to City Eastchester Bay Crossing - City Island Bridge, Bronx, New York

Parameter	6 NYCRR Part 371 and RCRA	Sample ID and Date Collect
		WSTCOMP-01
		6/1/2012
VOCs	**ug/L**	ND
SVOCs	**ug/L**	ND
PESTs	**ug/L**	ND
HERBs	**ug/L**	ND
METALs	**ug/L**	
Barium	100,000	151 J
PCBs	**mg/L**	ND
MISC. PARAMETERS (units)		
Reactivity Sulfide (mg/kg)	500	42
Reactivity Cyanide (mg/kg)	250	<10
pH (SU)	2-12.5	9.17
Ignitability	>140 °F	No
TPHC Diesel Range Organics (ug/kg)	NS	92,692
TPHC Gasoiline Range Organics (ug/kg)	NS	25.5

Notes:
ft bgs = feet below grade surface
NS = No Standard
SU = Standard unit
< = Parameter not detected above minimun detection limits (MDL) value reported in the MDL for that parameter.
J = Compound detected below the quantitation limit

Shading = Concentration exceeds 6 NYCRR Part 371 and RCRA Toxicity Characteristic Regulatory Levels for Hazardous Waste.

Table 9. Groundwater Quality
Phase II Subsurface Corridor Investigation for New 20" Sub Aqueous Water Main to City Island
Eastchester Bay Crossing - City Island Bridge, Bronx, New York

Parameter[1]	NYCDEP Limitations to Sanitary or Combined Sewers		NYS Ambient Water Quality Standards/Guidance Values		Well ID and Date Collected GW-01 6/1/2012	
CBOD[4]	NS	mg/L	NS	mg/L	ND	
Chloride[4]	NS	mg/L	NS	mg/L	160	
Flash Point - Liquid/Solid	> 140	°F	NS	°F	>150	
Nitrate+Nitrite	NS	mg/L	NS	mg/L	0.76	
Non-Polar Material[2]	50	mg/L	NS	mg/L	ND	
pH	5-12	pH	NS	pH	7.39	
Phenolics	NS	mg/L	NS	mg/L	0.008	J
Temperature	150	Fah.	NS	Celcius	63.68	
TKN	NS	mg/L	NS	mg/L	0.37	J
Total Nitrogen[4]	NS	mg/L	NS	mg/L	1.13	
Total Solids[4]	NS	mg/L	NS	mg/L	1,010	
Total Suspended Solids[3]	350	mg/L	NS	mg/L	420	
Cadmium	2 / 0.69	mg/L	NS	mg/L	ND	
Chromium Hexavalent (VI)	5	mg/L	NS	mg/L	ND	
Copper	5	mg/L	NS	°F	0.101	
Lead	5	mg/L	NS	mg/L	0.371	
Mercury	0.05	mg/L	NS	mg/L	0.00056	N
Nickel	3	mg/L	NS	mg/L	0.0307	
Zinc	5	mg/L	NS	pH	0.441	N
Benzene	134	ug/L	NS	mg/L	ND	
Carbontetrachloride	NS	mg/L	NS	Celcius	ND	
Chloroform	NS	mg/L	NS	mg/L	39	
cis-1,2-Dichloroethylene	NS	mg/L			NA	
1,4 Dichlorobenzene	NS	mg/L	NS	mg/L	ND	
Ethylbenzene	380	ug/L	NS	mg/L	ND	
Methyl-Tert-Butyl-Ether (MTBE)	50	ug/L	NS	mg/L	ND	
Naphthalene	47	ug/L	NS	°F	ND	
Tetrachloroethylene (Perc)	20	ug/L	NS	mg/L	ND	
Toluene	74	ug/L	NS	mg/L	ND	
1,2,4 Trichlorobenzene	NS	mg/L	NS	mg/L	ND	
1,1,1 Trichloroethane	NS	mg/L	NS	pH	ND	
Xylenes (Total)	74	ug/L	NS	mg/L	ND	
PCBs (Total)	1	ug/L	NS	Celcius	ND	

Notes:
NYS Ambient Water Quality Standards/Guidance Values for SB Waterbody Classifications
NS = No Standard
NA = Not Analyzed

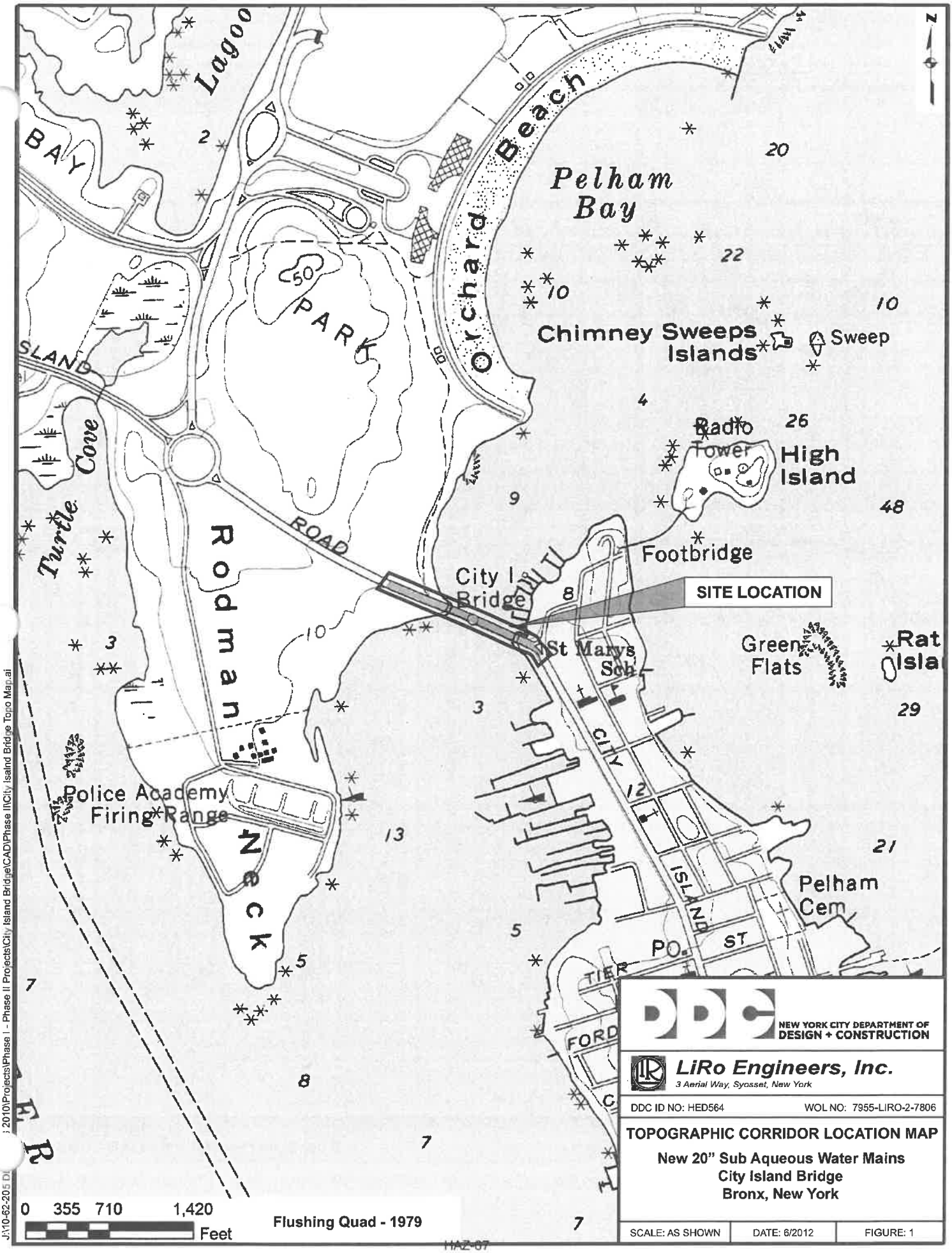
> = Less than
J = Compound detected below the quantitation limit
N = Spiked sample recovery not within control limits

Shaded = Concentration exceeds NYCDEP Limitations for Effluent to Sanitary or Combined Sewers (daily limit)

[1] All handling and preservation of collected samples and laboratory analyses of samples was performed in accordance with 40 CFR Part 136.
[2] Analysis for non-polar materials was performed by USEPA method 1664.

[3] For discharge >= 10,000 gpd, the TSS limit is 350 mg/l. For discharge < 10,000 gpd, the limit is determined on a case by case basis.
[4] Analysis for Carbonaceous Biochemical Oxygen Demand (CBOD), Chloride, Total Solids, and Total Nitrogen are required if proposed discharge >= 10,000 gpd.

FIGURE 1 – TOPOGRAPHIC CORRIDOR LOCATION MAP



NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

DDC ID NO: HED564 WOL NO: 7955-LIRO-2-7806

TOPOGRAPHIC CORRIDOR LOCATION MAP

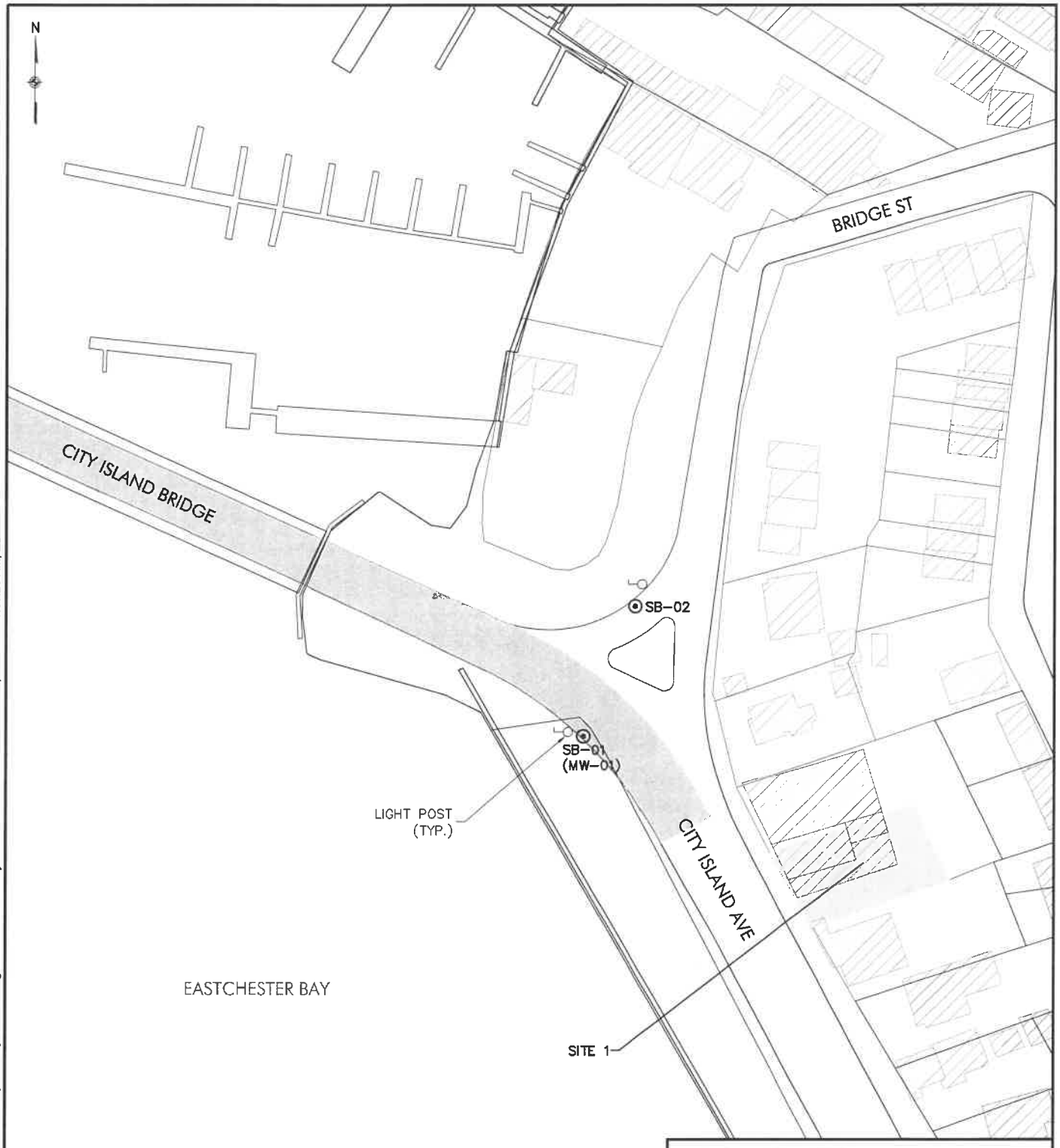
New 20" Sub Aqueous Water Mains
City Island Bridge
Bronx, New York

SCALE: AS SHOWN	DATE: 6/2012	FIGURE: 1

J:\10-62-205 D\2010\Projects\Phase I - Phase II Projects\City Island Bridge\CAD\Phase II\City Island Bridge Topo Map.ai

HAZ-07

FIGURE 2 – SAMPLE LOCATION PLAN



LEGEND

- SOIL BORING
- CORRIDOR WORK AREA
- HIGH OR MODERATE RISK PROPERTY

50 0 50
SCALE IN FEET

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

LiRo Engineers, Inc.
15-09 132nd Street, College Point, New York

DDC ID NO: HED564 WOL NO: 7955-LIRO-2-7806

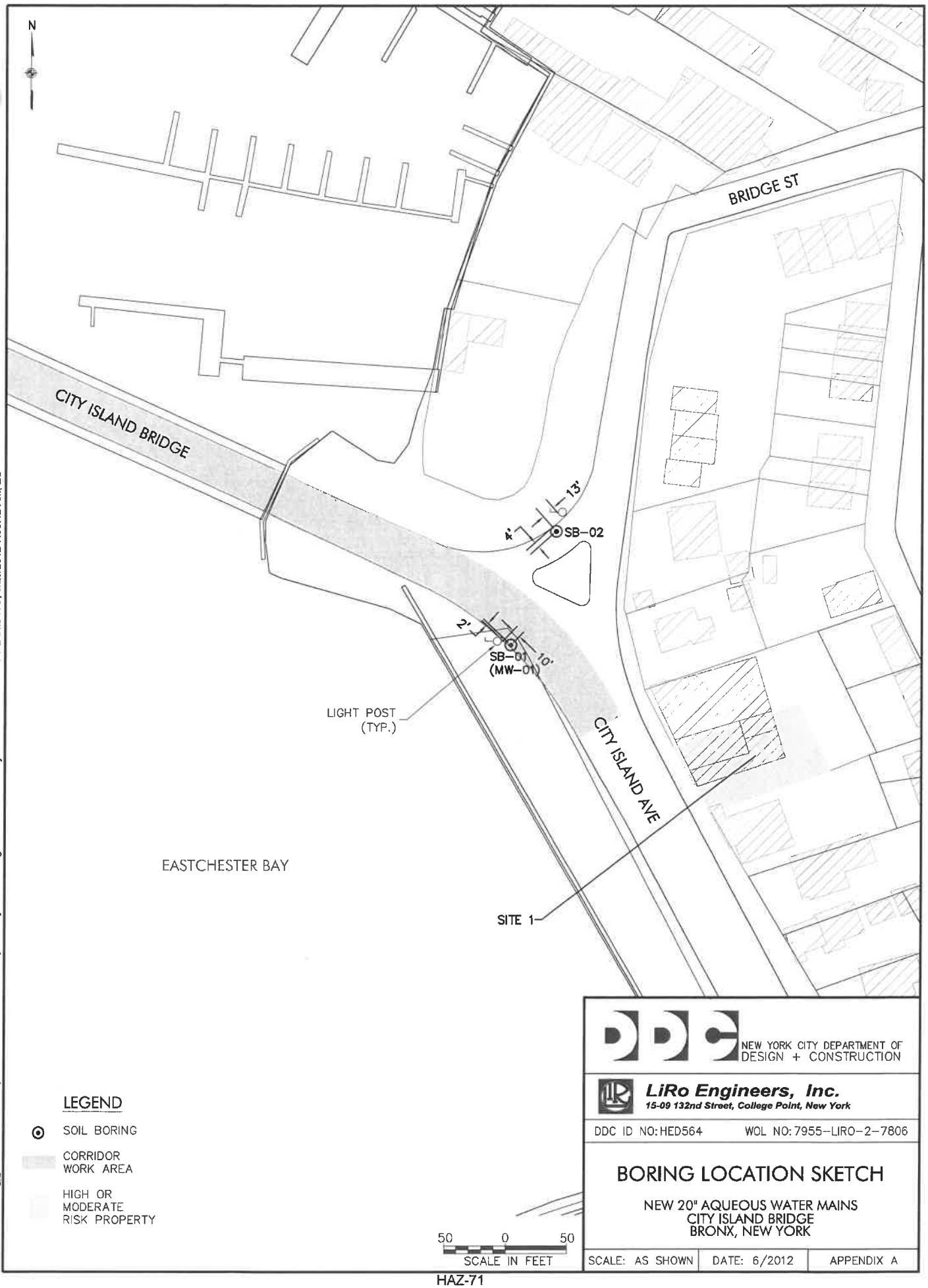
SAMPLE LOCATION PLAN

NEW 20" AQUEOUS WATER MAINS
CITY ISLAND BRIDGE
BRONX, NEW YORK

SCALE: AS SHOWN	DATE: 6/2012	FIGURE 2

J:\10-62-20... BEGS 2010\Projects\Phase I - Phase II Projects\City Island Bridge\CAD\Phase II\City Island SAMPLE LOC PLAN.DWG, 6/14/2012 9:06:20 AM, ES

APPENDIX A
BORING LOCATION SKETCHES



NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

LiRo Engineers, Inc.
15-09 132nd Street, College Point, New York

DDC ID NO: HED564 WOL NO: 7955-LIRO-2-7806

BORING LOCATION SKETCH

NEW 20" AQUEOUS WATER MAINS
CITY ISLAND BRIDGE
BRONX, NEW YORK

SCALE: AS SHOWN	DATE: 6/2012	APPENDIX A

J:\10-62-20... BEGS 2010\Projects\Phase I - Phase II Projects\City Island Bridge\CAD\Phase II\City Island BORING LOC PL....DWG, 6/29/2012 7:58:12 AM, ES

APPENDIX B
GEOLOGIC BORING LOGS AND TEMPORARY WELL CONSTRUCTION DETAILS

LiRo Engineers, Inc.

TEST BORING LOG

PROJECT:	City Island Bridge Corridor
CLIENT:	Department of Design and Construction
BORING CONTRACTOR:	Aquifer Drilling and Testing, Inc.
GROUNDWATER:	10 ft bgs

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	TUBE
TYPE			
DIA.			
WT.			
FALL			

BORING NO:	SB-01
SHEET:	1 of 1
JOB NO.:	10-62-205
LOCATION:	City Island Ave., Bronx, NY
GROUND ELEVATION:	NA
DATE STARTED:	June 1, 2012
DATE FINISHED:	June 1, 2012
DRILLER:	ADT - Andrea Larkin
GEOLOGIST:	Eva Jakubowska
REVIEWED BY:	

DEPTH FEET	SAMPLE STRATA	SAMPLE "S" NO.	SAMPLE "N" NO.	SAMPLE BLOWS PER 6"	SAMPLE REC% RQD%	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	USCS	REMARKS
1	FILL	Composite	1		NA	Dark Brown		0-2' medium SAND with some rocks and gravel (FILL).	FILL	<1 ppm
5								2-6' medium SAND, with some ash, rocks, and sea shells (FILL).		<1 ppm
										<1 ppm
			2		30%	Black		6-10' ASH and ROCKS with trace sand (FILL). Wet at 10 ft bgs.	FILL	<1 ppm
10		Grab								
			3		45%	Brown grey		10-15' CLAY with some sand, ash and shells (FILL). Saturated.	FILL	<1 ppm
15										
			4		100%	Reddish Brown		15-17' medium SAND with some ash and rocks (FILL). Wet	FILL	<1 ppm
	SM							17-20' fine SAND. Wet.	SM	
20										
								Boring ended at 20 ft bgs.		
25										
30										
35										

COMMENTS:	SB-01-9.5-10.0 Grab
	COMP-SB-01 Composite
	GW-01

PROJECT NO.:	10-62-205
BORING NO.:	SB-01

LiRo Engineers, Inc.

TEST BORING LOG

PROJECT:	City Island Bridge Corridor
CLIENT:	Department of Design and Construction
BORING CONTRACTOR:	Aquifer Drilling and Testing, Inc.
GROUNDWATER:	16 ft bgs

DATE	TIME	LEVEL	TYPE

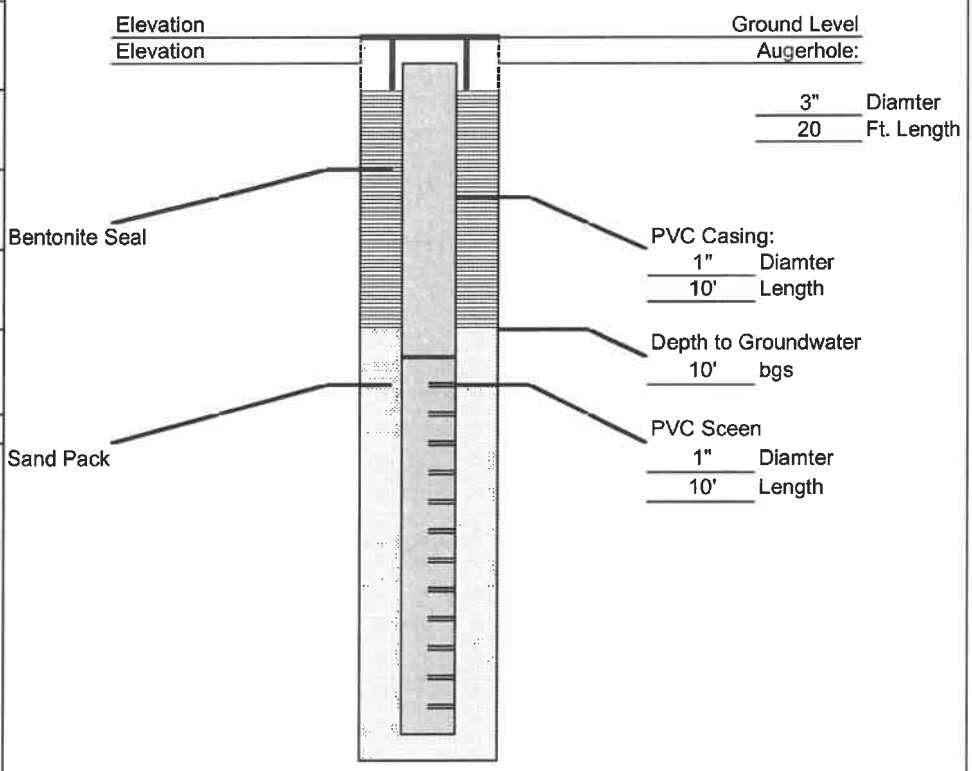
	CAS.	SAMPLER	TUBE
TYPE			
DIA.			
WT.			
FALL			

BORING NO:	SB-02
SHEET:	1 of 1
JOB NO.:	10-62-205
LOCATION:	City Island Ave., Bronx, NY
GROUND ELEVATION:	NA
DATE STARTED:	June 1, 2012
DATE FINISHED:	June 1, 2012
DRILLER:	ADT - Andrea Larkin
GEOLOGIST:	Eva Jakubowska
REVIEWED BY:	

DEPTH FEET	SAMPLE STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
1	FILL	Composite	1		NA	Dark Brown		0-2' fine to medium SAND with some ash and rocks (FILL).	FILL	<1 ppm
								2-6' medium SAND, with some rocks and gravel (FILL).		<1 ppm
5										<1 ppm
			2		60%	Brown		6-8' fine SAND with some rocks, gravel, and ash (FILL).	FILL	<1 ppm
10						Red Brown		8-10' CLAY with some rocks and gravel (FILL).		
			3		50%	Brown		10-12' fine SANE, with some concrete pieces, rocks (FILL).	FILL	<1 ppm
15						Red Brown		12-15' SAND, with some clay, and rocks (FILL).		
		Grab	4		20%	Dark Brown		15-16' course SAND, some gravel and rocks (FILL).		
20								Refusal at 16 ft bgs.		
25										
30										
35										

COMMENTS:	SB-02-15.5-16 Grab
	COMP-SB-02 Composite
PROJECT NO.:	10-62-205
BORING NO.:	SB-02

DRILLING SUMMARY	MONITORING WELL CONSTRUCTION LOG
Geolgist: Eva Jakubowska	
Drilling Company: Aquifer Drilling and Testing Inc. (ADT)	
Driller: Andrea Larkin	
Rig Make/Model: GeoProbe	
Date: 6/1/2012	
GEOLOGIC LOG	
Depth (ft.) / Desricption: SEE LOG	
WELL DESIGN	



NOT TO SCALE

CASING MATERIAL	*SCREEN MATERIAL*	*FILL MATERIAL*
Surface: NA	Type: Scheule 40 PVC	Type: Sand NO. 2 Setting: 10 - 20 ft
Monitor: 1" PVC	Slot Diamter: 0.010	*SEAL MATERIAL* Type: Bentonite Slurry Setting: 1 - 9 ft Type: Concrete Pad Setting: NA

COMMENTS:
Temporary well point

LEGEND:
- PVC Casing
- PVC Screen
- No.2 Sand Pack
- Bentonite Seal

CLIENT:	**LOCATION:**	Project No.
NYCDDC	City Island Bridge Corridor	10-62-205
LiRo Engineers, Inc.	**Monitoring Well Construction Details**	*Well Number:* **MW-01**

APPENDIX C
LABORATORY ANALYTICAL RESULTS

CHEMTECH

DATA FOR

VOLATILE ORGANICS

SEMI-VOLATILE ORGANICS

GC SEMI-VOLATILES

METALS

GENERAL CHEMISTRY

PROJECT NAME : CITY ISLAND BRIDGE-BRONX

LIRO GROUP LTD.

690 Delaware Ave.

Buffalo, NY - 14209

Phone No: 7168825476

ORDER ID : **D2945**

ATTENTION : **Steve Frank**

ACCREDITED IN ACCORDANCE WITH nelac

DoD ELAP

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Date : 06/08/2012

Dear Steve Frank,

1 water and **5** soil samples for the **City Island Bridge-Bronx** project were received on **06/01/2012.** The analytical fax results for those samples requested for an expedited turn around time may be seen in this report. Please contact me if you have any questions or concerns regarding this report.

The invoice for this workorder is also attached to the e-mail.

Regards,

Kurt Hummler

908-728-3143

khummler@chemtech.net

CHEMTECH

CHAIN OF CUSTODY RECORD

B1205136

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO. D2945
QUOTE NO.
COC Number 026836

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: LiRo Engineers
ADDRESS: 690 Delaware Ave
CITY: Buffalo STATE: NY ZIP: 14203
ATTENTION: Steve Frank
PHONE: (716) 882-5476 FAX: —

CLIENT PROJECT INFORMATION

PROJECT NAME: City Island Bridge - Bronx
PROJECT NO.: LOCATION: Bronx, NY
PROJECT MANAGER: Steve Frank
e-mail: Franks@liro.com
PHONE: (716) 882-5476 FAX: —

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS: Same
CITY: STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

~~FAX~~: e-mail 5 DAYS *
HARD COPY: DAYS *
EDD: DAYS *
PREAPPROVED TAT: ☐ YES ☐ NO
* STANDARD TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

☑ LEVEL 1: Results only ☐ Others
☐ LEVEL 2: Results + QC
☐ LEVEL 3: Results (plus results raw data) + QC
☐ LEVEL 4: Results + QC (all raw data)
☐ EDD Format:

ANALYSIS

1 TCL VOCs
2 TCL SVOCs
3 Pesticides
4 Herbicides
5 PCBs
6 TAL Metals
7 NYCDEP effluent
8 RCRA Characteristics
9 TCLP Waste Class

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
1.	SB-01 - 9.5 - 10.0	S		X	6/1/2012	1120	1	X									
2.	SB-02 - 15.5 - 16.0	S		X		1015	1	X									
3.	Comp - SB-01	S	X			1115	1		X	X	X	X	X				
4.	Comp - SB-02	S	X			1020	1		X	X	X	X	X				
5.	WSTCOMP-01	S	X			1140	2								X	X	
6.	GW-1	GW		X		1230	11							X			
7.																	
8.																	
9.																	
10.																	

PRESERVATIVES: A – HCl, B – HNO_3, C – H_2SO_4, D – NaOH, E – ICE, F – Other

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. Eva Jurkowski	6.1.2012 1405	1.
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
2.		2.
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:
3.	6-1-12 1710	3. Shelley Melt

Conditions of bottles or coolers at receipt: ☑ Compliant ☐ Non Compliant
MeOH extraction requires an additional 4 oz jar for percent solid.
Comments:

Cooler Temp. 5°c
Ice in Cooler? Yes

Page 1 of 1

SHIPPED VIA: CLIENT: ☐ HAND DELIVERED ☐ OVERNIGHT
CHEMTECH: ☑ PICKED UP ☐ OVERNIGHT

Shipment Complete: ☑ YES ☐ NO

HAZ-79

Revision 8/2007

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-01-9.5-10.0	SDG No.:	D2945
Lab Sample ID:	D2945-01	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	12
Sample Wt/Vol:	4.98 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033781.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	2.85	U	0.74	2.85	5.7	ug/Kg
74-87-3	Chloromethane	2.85	U	0.98	2.85	5.7	ug/Kg
75-01-4	Vinyl Chloride	2.85	U	1.4	2.85	5.7	ug/Kg
74-83-9	Bromomethane	2.85	U	2.8	2.85	5.7	ug/Kg
75-00-3	Chloroethane	2.85	U	1.6	2.85	5.7	ug/Kg
75-69-4	Trichlorofluoromethane	2.85	U	1.5	2.85	5.7	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.85	U	1.5	2.85	5.7	ug/Kg
75-35-4	1,1-Dichloroethene	2.85	U	1.7	2.85	5.7	ug/Kg
67-64-1	Acetone	14.5	U	3.4	14.5	29	ug/Kg
75-15-0	Carbon Disulfide	2.85	U	1.2	2.85	5.7	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.85	U	1.1	2.85	5.7	ug/Kg
79-20-9	Methyl Acetate	2.85	U	1.7	2.85	5.7	ug/Kg
75-09-2	Methylene Chloride	2.85	U	1.6	2.85	5.7	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.85	U	0.79	2.85	5.7	ug/Kg
75-34-3	1,1-Dichloroethane	2.85	U	1.1	2.85	5.7	ug/Kg
110-82-7	Cyclohexane	2.85	U	1.2	2.85	5.7	ug/Kg
78-93-3	2-Butanone	14.5	U	3.5	14.5	29	ug/Kg
56-23-5	Carbon Tetrachloride	2.85	U	1.1	2.85	5.7	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.85	U	1	2.85	5.7	ug/Kg
74-97-5	Bromochloromethane	2.85	UQ	0.9	2.85	5.7	ug/Kg
67-66-3	Chloroform	2.85	U	0.84	2.85	5.7	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.85	U	1	2.85	5.7	ug/Kg
108-87-2	Methylcyclohexane	2.85	UQ	1.2	2.85	5.7	ug/Kg
71-43-2	Benzene	2.85	U	0.43	2.85	5.7	ug/Kg
107-06-2	1,2-Dichloroethane	2.85	U	0.73	2.85	5.7	ug/Kg
79-01-6	Trichloroethene	2.85	U	0.98	2.85	5.7	ug/Kg
78-87-5	1,2-Dichloropropane	2.85	U	0.3	2.85	5.7	ug/Kg
75-27-4	Bromodichloromethane	2.85	U	0.71	2.85	5.7	ug/Kg
108-10-1	4-Methyl-2-Pentanone	14.5	U	3.3	14.5	29	ug/Kg
108-88-3	Toluene	2.85	U	0.73	2.85	5.7	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.85	U	0.9	2.85	5.7	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-01-9.5-10.0	SDG No.:	D2945
Lab Sample ID:	D2945-01	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	12
Sample Wt/Vol:	4.98 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033781.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
10061-01-5	cis-1,3-Dichloropropene	2.85	U	0.82	2.85	5.7	ug/Kg
79-00-5	1,1,2-Trichloroethane	2.85	U	1	2.85	5.7	ug/Kg
591-78-6	2-Hexanone	14.5	U	4.5	14.5	29	ug/Kg
124-48-1	Dibromochloromethane	2.85	U	0.62	2.85	5.7	ug/Kg
106-93-4	1,2-Dibromoethane	2.85	U	0.73	2.85	5.7	ug/Kg
127-18-4	Tetrachloroethene	2.85	U	1.2	2.85	5.7	ug/Kg
108-90-7	Chlorobenzene	2.85	U	0.57	2.85	5.7	ug/Kg
100-41-4	Ethyl Benzene	2.85	U	0.71	2.85	5.7	ug/Kg
179601-23-1	m/p-Xylenes	5.5	U	0.82	5.5	11	ug/Kg
95-47-6	o-Xylene	2.85	U	0.78	2.85	5.7	ug/Kg
100-42-5	Styrene	2.85	U	0.51	2.85	5.7	ug/Kg
75-25-2	Bromoform	2.85	U	0.84	2.85	5.7	ug/Kg
98-82-8	Isopropylbenzene	2.85	U	0.55	2.85	5.7	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.85	U	0.52	2.85	5.7	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.85	U	0.42	2.85	5.7	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.85	U	0.47	2.85	5.7	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.85	U	0.71	2.85	5.7	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.85	U	0.99	2.85	5.7	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.85	U	0.8	2.85	5.7	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	2.85	U	0.57	2.85	5.7	ug/Kg
123-91-1	1,4-Dioxane	55	U	57	55	110	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	63.3	*	56 - 120		127%	SPK: 50
1868-53-7	Dibromofluoromethane	43.5		57 - 135		87%	SPK: 50
2037-26-5	Toluene-d8	49.1		67 - 123		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.1		33 - 141		86%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	28346	4.37				
540-36-3	1,4-Difluorobenzene	48496	5.1				
3114-55-4	Chlorobenzene-d5	45149	9.3				
3855-82-1	1,4-Dichlorobenzene-d4	16882	12.23				

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-01-9.5-10.0	SDG No.:	D2945
Lab Sample ID:	D2945-01	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	12
Sample Wt/Vol:	4.98 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033781.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-01-9.5-10.0RE	SDG No.:	D2945
Lab Sample ID:	D2945-01RE	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	12
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033783.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	2.8	U	0.73	2.8	5.6	ug/Kg
74-87-3	Chloromethane	2.8	U	0.97	2.8	5.6	ug/Kg
75-01-4	Vinyl Chloride	2.8	U	1.4	2.8	5.6	ug/Kg
74-83-9	Bromomethane	2.8	U	2.8	2.8	5.6	ug/Kg
75-00-3	Chloroethane	2.8	U	1.6	2.8	5.6	ug/Kg
75-69-4	Trichlorofluoromethane	2.8	U	1.5	2.8	5.6	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.8	U	1.5	2.8	5.6	ug/Kg
75-35-4	1,1-Dichloroethene	2.8	U	1.7	2.8	5.6	ug/Kg
67-64-1	Acetone	14	U	3.4	14	28	ug/Kg
75-15-0	Carbon Disulfide	2.8	U	1.2	2.8	5.6	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.8	U	1.1	2.8	5.6	ug/Kg
79-20-9	Methyl Acetate	2.8	U	1.7	2.8	5.6	ug/Kg
75-09-2	Methylene Chloride	2.8	U	1.6	2.8	5.6	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.8	U	0.78	2.8	5.6	ug/Kg
75-34-3	1,1-Dichloroethane	2.8	U	1.1	2.8	5.6	ug/Kg
110-82-7	Cyclohexane	2.8	U	1.1	2.8	5.6	ug/Kg
78-93-3	2-Butanone	14	U	3.5	14	28	ug/Kg
56-23-5	Carbon Tetrachloride	2.8	U	1.1	2.8	5.6	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.8	U	1	2.8	5.6	ug/Kg
74-97-5	Bromochloromethane	2.8	UQ	0.89	2.8	5.6	ug/Kg
67-66-3	Chloroform	2.8	U	0.83	2.8	5.6	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.8	U	0.99	2.8	5.6	ug/Kg
108-87-2	Methylcyclohexane	2.8	UQ	1.2	2.8	5.6	ug/Kg
71-43-2	Benzene	2.8	U	0.43	2.8	5.6	ug/Kg
107-06-2	1,2-Dichloroethane	2.8	U	0.72	2.8	5.6	ug/Kg
79-01-6	Trichloroethene	2.8	U	0.97	2.8	5.6	ug/Kg
78-87-5	1,2-Dichloropropane	2.8	U	0.29	2.8	5.6	ug/Kg
75-27-4	Bromodichloromethane	2.8	U	0.7	2.8	5.6	ug/Kg
108-10-1	4-Methyl-2-Pentanone	14	U	3.3	14	28	ug/Kg
108-88-3	Toluene	2.8	U	0.72	2.8	5.6	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.8	U	0.89	2.8	5.6	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-01-9.5-10.0RE	SDG No.:	D2945
Lab Sample ID:	D2945-01RE	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	12
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033783.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
10061-01-5	cis-1,3-Dichloropropene	2.8	U	0.81	2.8	5.6	ug/Kg
79-00-5	1,1,2-Trichloroethane	2.8	U	1	2.8	5.6	ug/Kg
591-78-6	2-Hexanone	14	U	4.4	14	28	ug/Kg
124-48-1	Dibromochloromethane	2.8	U	0.61	2.8	5.6	ug/Kg
106-93-4	1,2-Dibromoethane	2.8	U	0.72	2.8	5.6	ug/Kg
127-18-4	Tetrachloroethene	2.8	U	1.1	2.8	5.6	ug/Kg
108-90-7	Chlorobenzene	2.8	U	0.56	2.8	5.6	ug/Kg
100-41-4	Ethyl Benzene	2.8	U	0.7	2.8	5.6	ug/Kg
179601-23-1	m/p-Xylenes	5.5	U	0.81	5.5	11	ug/Kg
95-47-6	o-Xylene	2.8	U	0.77	2.8	5.6	ug/Kg
100-42-5	Styrene	2.8	U	0.51	2.8	5.6	ug/Kg
75-25-2	Bromoform	2.8	U	0.83	2.8	5.6	ug/Kg
98-82-8	Isopropylbenzene	2.8	U	0.54	2.8	5.6	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.8	U	0.52	2.8	5.6	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.8	U	0.42	2.8	5.6	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.8	U	0.46	2.8	5.6	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.8	U	0.7	2.8	5.6	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.8	U	0.98	2.8	5.6	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.8	U	0.79	2.8	5.6	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	2.8	U	0.56	2.8	5.6	ug/Kg
123-91-1	1,4-Dioxane	55	U	56	55	110	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	44.1		56 - 120		88%	SPK: 50
1868-53-7	Dibromofluoromethane	41.5		57 - 135		83%	SPK: 50
2037-26-5	Toluene-d8	50.6		67 - 123		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	40.1		33 - 141		80%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	9610	4.35				
540-36-3	1,4-Difluorobenzene	12592	5.1				
3114-55-4	Chlorobenzene-d5	11568	9.3				
3855-82-1	1,4-Dichlorobenzene-d4	3310	12.23				

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-01-9.5-10.0RE	SDG No.:	D2945
Lab Sample ID:	D2945-01RE	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	12
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033783.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-02-15.5-16.0	SDG No.:	D2945
Lab Sample ID:	D2945-02	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	9
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033776.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	2.75	U	0.71	2.75	5.5	ug/Kg
74-87-3	Chloromethane	2.75	U	0.94	2.75	5.5	ug/Kg
75-01-4	Vinyl Chloride	2.75	U	1.3	2.75	5.5	ug/Kg
74-83-9	Bromomethane	2.75	U	2.7	2.75	5.5	ug/Kg
75-00-3	Chloroethane	2.75	U	1.5	2.75	5.5	ug/Kg
75-69-4	Trichlorofluoromethane	2.75	U	1.4	2.75	5.5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.75	U	1.5	2.75	5.5	ug/Kg
75-35-4	1,1-Dichloroethene	2.75	U	1.6	2.75	5.5	ug/Kg
67-64-1	Acetone	13.5	U	3.3	13.5	27	ug/Kg
75-15-0	Carbon Disulfide	2.75	U	1.2	2.75	5.5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.75	U	1.1	2.75	5.5	ug/Kg
79-20-9	Methyl Acetate	2.75	U	1.7	2.75	5.5	ug/Kg
75-09-2	Methylene Chloride	2.75	U	1.6	2.75	5.5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.75	U	0.76	2.75	5.5	ug/Kg
75-34-3	1,1-Dichloroethane	2.75	U	1	2.75	5.5	ug/Kg
110-82-7	Cyclohexane	2.75	U	1.1	2.75	5.5	ug/Kg
78-93-3	2-Butanone	13.5	U	3.4	13.5	27	ug/Kg
56-23-5	Carbon Tetrachloride	2.75	U	1.1	2.75	5.5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.75	U	0.98	2.75	5.5	ug/Kg
74-97-5	Bromochloromethane	2.75	UQ	0.87	2.75	5.5	ug/Kg
67-66-3	Chloroform	2.75	U	0.81	2.75	5.5	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.75	U	0.97	2.75	5.5	ug/Kg
108-87-2	Methylcyclohexane	2.75	UQ	1.2	2.75	5.5	ug/Kg
71-43-2	Benzene	2.75	U	0.42	2.75	5.5	ug/Kg
107-06-2	1,2-Dichloroethane	2.75	U	0.7	2.75	5.5	ug/Kg
79-01-6	Trichloroethene	2.75	U	0.94	2.75	5.5	ug/Kg
78-87-5	1,2-Dichloropropane	2.75	U	0.29	2.75	5.5	ug/Kg
75-27-4	Bromodichloromethane	2.75	U	0.68	2.75	5.5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	13.5	U	3.2	13.5	27	ug/Kg
108-88-3	Toluene	2.75	U	0.7	2.75	5.5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.75	U	0.87	2.75	5.5	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-02-15.5-16.0	SDG No.:	D2945
Lab Sample ID:	D2945-02	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	9
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033776.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
10061-01-5	cis-1,3-Dichloropropene	2.75	U	0.79	2.75	5.5	ug/Kg
79-00-5	1,1,2-Trichloroethane	2.75	U	0.99	2.75	5.5	ug/Kg
591-78-6	2-Hexanone	13.5	U	4.3	13.5	27	ug/Kg
124-48-1	Dibromochloromethane	2.75	U	0.59	2.75	5.5	ug/Kg
106-93-4	1,2-Dibromoethane	2.75	U	0.7	2.75	5.5	ug/Kg
127-18-4	Tetrachloroethene	2.75	U	1.1	2.75	5.5	ug/Kg
108-90-7	Chlorobenzene	2.75	U	0.55	2.75	5.5	ug/Kg
100-41-4	Ethyl Benzene	2.75	U	0.68	2.75	5.5	ug/Kg
179601-23-1	m/p-Xylenes	5.5	U	0.79	5.5	11	ug/Kg
95-47-6	o-Xylene	2.75	U	0.75	2.75	5.5	ug/Kg
100-42-5	Styrene	2.75	U	0.49	2.75	5.5	ug/Kg
75-25-2	Bromoform	2.75	U	0.81	2.75	5.5	ug/Kg
98-82-8	Isopropylbenzene	2.75	U	0.53	2.75	5.5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.75	U	0.5	2.75	5.5	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.75	U	0.41	2.75	5.5	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.75	U	0.45	2.75	5.5	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.75	U	0.68	2.75	5.5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.75	U	0.95	2.75	5.5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.75	U	0.77	2.75	5.5	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	2.75	U	0.55	2.75	5.5	ug/Kg
123-91-1	1,4-Dioxane	55	U	55	55	110	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	56.5		56 - 120		113%	SPK: 50
1868-53-7	Dibromofluoromethane	47.4		57 - 135		95%	SPK: 50
2037-26-5	Toluene-d8	49.3		67 - 123		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	55.3		33 - 141		111%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	39670	4.35				
540-36-3	1,4-Difluorobenzene	65245	5.1				
3114-55-4	Chlorobenzene-d5	67350	9.31				
3855-82-1	1,4-Dichlorobenzene-d4	36828	12.22				

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-02-15.5-16.0	SDG No.:	D2945
Lab Sample ID:	D2945-02	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	9
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033776.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-02-15.5-16.0RE	SDG No.:	D2945
Lab Sample ID:	D2945-02RE	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	9
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033782.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	2.7	U	0.7	2.7	5.4	ug/Kg
74-87-3	Chloromethane	2.7	U	0.93	2.7	5.4	ug/Kg
75-01-4	Vinyl Chloride	2.7	U	1.3	2.7	5.4	ug/Kg
74-83-9	Bromomethane	2.7	U	2.6	2.7	5.4	ug/Kg
75-00-3	Chloroethane	2.7	U	1.5	2.7	5.4	ug/Kg
75-69-4	Trichlorofluoromethane	2.7	U	1.4	2.7	5.4	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.7	U	1.4	2.7	5.4	ug/Kg
75-35-4	1,1-Dichloroethene	2.7	U	1.6	2.7	5.4	ug/Kg
67-64-1	Acetone	13.5	U	3.3	13.5	27	ug/Kg
75-15-0	Carbon Disulfide	2.7	U	1.1	2.7	5.4	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2.7	U	1	2.7	5.4	ug/Kg
79-20-9	Methyl Acetate	2.7	U	1.6	2.7	5.4	ug/Kg
75-09-2	Methylene Chloride	2.7	U	1.5	2.7	5.4	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2.7	U	0.75	2.7	5.4	ug/Kg
75-34-3	1,1-Dichloroethane	2.7	U	1	2.7	5.4	ug/Kg
110-82-7	Cyclohexane	2.7	U	1.1	2.7	5.4	ug/Kg
78-93-3	2-Butanone	13.5	U	3.4	13.5	27	ug/Kg
56-23-5	Carbon Tetrachloride	2.7	U	1.1	2.7	5.4	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2.7	U	0.96	2.7	5.4	ug/Kg
74-97-5	Bromochloromethane	2.7	UQ	0.85	2.7	5.4	ug/Kg
67-66-3	Chloroform	2.7	U	0.8	2.7	5.4	ug/Kg
71-55-6	1,1,1-Trichloroethane	2.7	U	0.95	2.7	5.4	ug/Kg
108-87-2	Methylcyclohexane	2.7	UQ	1.1	2.7	5.4	ug/Kg
71-43-2	Benzene	2.7	U	0.41	2.7	5.4	ug/Kg
107-06-2	1,2-Dichloroethane	2.7	U	0.69	2.7	5.4	ug/Kg
79-01-6	Trichloroethene	2.7	U	0.93	2.7	5.4	ug/Kg
78-87-5	1,2-Dichloropropane	2.7	U	0.28	2.7	5.4	ug/Kg
75-27-4	Bromodichloromethane	2.7	U	0.67	2.7	5.4	ug/Kg
108-10-1	4-Methyl-2-Pentanone	13.5	U	3.2	13.5	27	ug/Kg
108-88-3	Toluene	2.7	U	0.69	2.7	5.4	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2.7	U	0.85	2.7	5.4	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-02-15.5-16.0RE	SDG No.:	D2945
Lab Sample ID:	D2945-02RE	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	9
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033782.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
10061-01-5	cis-1,3-Dichloropropene	2.7	U	0.78	2.7	5.4	ug/Kg
79-00-5	1,1,2-Trichloroethane	2.7	U	0.97	2.7	5.4	ug/Kg
591-78-6	2-Hexanone	13.5	U	4.2	13.5	27	ug/Kg
124-48-1	Dibromochloromethane	2.7	U	0.58	2.7	5.4	ug/Kg
106-93-4	1,2-Dibromoethane	2.7	U	0.69	2.7	5.4	ug/Kg
127-18-4	Tetrachloroethene	2.7	U	1.1	2.7	5.4	ug/Kg
108-90-7	Chlorobenzene	2.7	U	0.54	2.7	5.4	ug/Kg
100-41-4	Ethyl Benzene	2.7	U	0.67	2.7	5.4	ug/Kg
179601-23-1	m/p-Xylenes	5.5	U	0.78	5.5	11	ug/Kg
95-47-6	o-Xylene	2.7	U	0.74	2.7	5.4	ug/Kg
100-42-5	Styrene	2.7	U	0.49	2.7	5.4	ug/Kg
75-25-2	Bromoform	2.7	U	0.8	2.7	5.4	ug/Kg
98-82-8	Isopropylbenzene	2.7	U	0.52	2.7	5.4	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2.7	U	0.5	2.7	5.4	ug/Kg
541-73-1	1,3-Dichlorobenzene	2.7	U	0.4	2.7	5.4	ug/Kg
106-46-7	1,4-Dichlorobenzene	2.7	U	0.44	2.7	5.4	ug/Kg
95-50-1	1,2-Dichlorobenzene	2.7	U	0.67	2.7	5.4	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.7	U	0.94	2.7	5.4	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2.7	U	0.76	2.7	5.4	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	2.7	U	0.54	2.7	5.4	ug/Kg
123-91-1	1,4-Dioxane	55	U	54	55	110	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	50.2		56 - 120		100%	SPK: 50
1868-53-7	Dibromofluoromethane	42.4		57 - 135		85%	SPK: 50
2037-26-5	Toluene-d8	49.3		67 - 123		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	40.2		33 - 141		80%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	10449	4.36				
540-36-3	1,4-Difluorobenzene	16205	5.1				
3114-55-4	Chlorobenzene-d5	14081	9.31				
3855-82-1	1,4-Dichlorobenzene-d4	5159	12.22				

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	SB-02-15.5-16.0RE	SDG No.:	D2945
Lab Sample ID:	D2945-02RE	Matrix:	SOIL
Analytical Method:	SW8260C	% Moisture:	9
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCL
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VF033782.D	1		06/05/12	VF060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-01	SDG No.:	D2945
Lab Sample ID:	D2945-03	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	16 Decanted:
Sample Wt/Vol:	10.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PE004955.D	1	06/05/12	06/07/12	PB63595

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
1918-00-9	DICAMBA	120	U	47.1	120	240	ug/Kg
120-36-5	DICHLORPROP	120	U	43.8	120	240	ug/Kg
94-75-7	2,4-D	120	U	116	120	240	ug/Kg
93-72-1	2,4,5-TP (SILVEX)	120	U	38.7	120	240	ug/Kg
93-76-5	2,4,5-T	120	U	36.4	120	240	ug/Kg
94-82-6	2,4-DB	120	U	105	120	240	ug/Kg
88-85-7	DINOSEB	120	U	86.8	120	240	ug/Kg
SURROGATES							
19719-28-9	2,4-DCAA	161		12 - 189		32%	SPK: 500

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-01	SDG No.:	D2945
Lab Sample ID:	D2945-03	Matrix:	SOIL
Level (low/med):	low	% Solid:	84

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	7860		1	0.74	2.19	4.38	mg/Kg	06/06/12	06/07/12	SW6010B
7440-36-0	Antimony	1.01	J	1	0.49	1.095	2.19	mg/Kg	06/06/12	06/07/12	SW6010B
7440-38-2	Arsenic	4.94		1	0.29	0.44	0.88	mg/Kg	06/06/12	06/07/12	SW6010B
7440-39-3	Barium	66.6		1	0.35	2.19	4.38	mg/Kg	06/06/12	06/07/12	SW6010B
7440-41-7	Beryllium	0.29		1	0.05	0.13	0.26	mg/Kg	06/06/12	06/07/12	SW6010B
7440-43-9	Cadmium	0.13	U	1	0.05	0.13	0.26	mg/Kg	06/06/12	06/07/12	SW6010B
7440-70-2	Calcium	1120		1	0.94	43.75	87.5	mg/Kg	06/06/12	06/07/12	SW6010B
7440-47-3	Chromium	17.6		1	0.11	0.22	0.44	mg/Kg	06/06/12	06/07/12	SW6010B
7440-48-4	Cobalt	6.66		1	0.5	0.655	1.31	mg/Kg	06/06/12	06/07/12	SW6010B
7440-50-8	Copper	27.4		1	0.28	0.44	0.88	mg/Kg	06/06/12	06/07/12	SW6010B
7439-89-6	Iron	12900		1	1.16	2.19	4.38	mg/Kg	06/06/12	06/07/12	SW6010B
7439-92-1	Lead	165		1	0.11	0.265	0.53	mg/Kg	06/06/12	06/07/12	SW6010B
7439-95-4	Magnesium	2710		1	4.01	43.75	87.5	mg/Kg	06/06/12	06/07/12	SW6010B
7439-96-5	Manganese	195		1	0.17	0.44	0.88	mg/Kg	06/06/12	06/07/12	SW6010B
7439-97-6	Mercury	0.692	D	5	0.012	0.029	0.058	mg/Kg	06/04/12	06/05/12	SW7471A
7440-02-0	Nickel	21.4		1	0.4	0.875	1.75	mg/Kg	06/06/12	06/07/12	SW6010B
7440-09-7	Potassium	1840		1	3.06	43.75	87.5	mg/Kg	06/06/12	06/07/12	SW6010B
7782-49-2	Selenium	0.44	U	1	0.36	0.44	0.88	mg/Kg	06/06/12	06/07/12	SW6010B
7440-22-4	Silver	0.22	U	1	0.13	0.22	0.44	mg/Kg	06/06/12	06/07/12	SW6010B
7440-23-5	Sodium	638		1	2.21	43.75	87.5	mg/Kg	06/06/12	06/07/12	SW6010B
7440-28-0	Thallium	0.875	U	1	0.24	0.875	1.75	mg/Kg	06/06/12	06/07/12	SW6010B
7440-62-2	Vanadium	24.3		1	0.52	0.875	1.75	mg/Kg	06/06/12	06/07/12	SW6010B
7440-66-6	Zinc	133		1	0.61	0.875	1.75	mg/Kg	06/06/12	06/07/12	SW6010B

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS-TAL				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-01	SDG No.:	D2945
Lab Sample ID:	D2945-03	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	16 Decanted:
Sample Wt/Vol:	10.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PC008277.D	1	06/05/12	06/07/12	PB63589

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
12674-11-2	Aroclor-1016	30	U	12	30	60	ug/Kg
11104-28-2	Aroclor-1221	30	U	12	30	60	ug/Kg
11141-16-5	Aroclor-1232	30	U	27	30	60	ug/Kg
53469-21-9	Aroclor-1242	30	U	12	30	60	ug/Kg
12672-29-6	Aroclor-1248	30	U	23	30	60	ug/Kg
11097-69-1	Aroclor-1254	30	U	5.3	30	60	ug/Kg
11096-82-5	Aroclor-1260	30	U	15	30	60	ug/Kg
SURROGATES							
877-09-8	Tetrachloro-m-xylene	18.5		10 - 166		93%	SPK: 20
2051-24-3	Decachlorobiphenyl	22.3		60 - 125		111%	SPK: 20

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-01	SDG No.:	D2945
Lab Sample ID:	D2945-03	Matrix:	SOIL
Analytical Method:	SW8081B	% Moisture:	16 Decanted:
Sample Wt/Vol:	10.09 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PD011030.D	1	06/04/12	06/05/12	PB63562

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
319-84-6	alpha-BHC	3	U	0.46	3	6	ug/Kg
319-85-7	beta-BHC	3	U	0.64	3	6	ug/Kg
319-86-8	delta-BHC	3	U	0.35	3	6	ug/Kg
58-89-9	gamma-BHC	3	U	0.53	3	6	ug/Kg
76-44-8	Heptachlor	3	U	0.5	3	6	ug/Kg
309-00-2	Aldrin	3	U	0.35	3	6	ug/Kg
1024-57-3	Heptachlor epoxide	3	U	0.57	3	6	ug/Kg
959-98-8	Endosulfan I	3	U	0.53	3	6	ug/Kg
60-57-1	Dieldrin	3	U	0.46	3	6	ug/Kg
72-55-9	4,4-DDE	3	U	0.71	3	6	ug/Kg
72-20-8	Endrin	3	U	0.64	3	6	ug/Kg
33213-65-9	Endosulfan II	3	U	0.5	3	6	ug/Kg
72-54-8	4,4-DDD	3	U	0.6	3	6	ug/Kg
1031-07-8	Endosulfan Sulfate	3	U	0.53	3	6	ug/Kg
50-29-3	4,4-DDT	86	P	0.5	3	6	ug/Kg
72-43-5	Methoxychlor	3	U	0.6	3	6	ug/Kg
53494-70-5	Endrin ketone	3	U	0.46	3	6	ug/Kg
7421-93-4	Endrin aldehyde	3	U	0.53	3	6	ug/Kg
5103-71-9	alpha-Chlordane	3	U	0.5	3	6	ug/Kg
5103-74-2	gamma-Chlordane	3	U	0.46	3	6	ug/Kg
8001-35-2	Toxaphene	30	U	12	30	60	ug/Kg
SURROGATES							
2051-24-3	Decachlorobiphenyl	12.3		10 - 169		61%	SPK: 20
877-09-8	Tetrachloro-m-xylene	20.7		31 - 151		103%	SPK: 20

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-01	SDG No.:	D2945
Lab Sample ID:	D2945-03	Matrix:	SOIL
Analytical Method:	SW8081B	% Moisture:	16 Decanted:
Sample Wt/Vol:	10.09 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PD011030.D	1	06/04/12	06/05/12	PB63562

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-01RE	SDG No.:	D2945
Lab Sample ID:	D2945-03RE	Matrix:	SOIL
Analytical Method:	SW8081B	% Moisture:	16 Decanted:
Sample Wt/Vol:	10.09 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PD011078.D	1	06/04/12	06/06/12	PB63562

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
319-84-6	alpha-BHC	3	U	0.46	3	6	ug/Kg
319-85-7	beta-BHC	3	U	0.64	3	6	ug/Kg
319-86-8	delta-BHC	3	U	0.35	3	6	ug/Kg
58-89-9	gamma-BHC	3	U	0.53	3	6	ug/Kg
76-44-8	Heptachlor	3	U	0.5	3	6	ug/Kg
309-00-2	Aldrin	3	U	0.35	3	6	ug/Kg
1024-57-3	Heptachlor epoxide	3	U	0.57	3	6	ug/Kg
959-98-8	Endosulfan I	3	U	0.53	3	6	ug/Kg
60-57-1	Dieldrin	3	U	0.46	3	6	ug/Kg
72-55-9	4,4-DDE	3	U	0.71	3	6	ug/Kg
72-20-8	Endrin	3	U	0.64	3	6	ug/Kg
33213-65-9	Endosulfan II	3	U	0.5	3	6	ug/Kg
72-54-8	4,4-DDD	3	U	0.6	3	6	ug/Kg
1031-07-8	Endosulfan Sulfate	3	U	0.53	3	6	ug/Kg
50-29-3	4,4-DDT	77	P	0.5	3	6	ug/Kg
72-43-5	Methoxychlor	3	U	0.6	3	6	ug/Kg
53494-70-5	Endrin ketone	3	U	0.46	3	6	ug/Kg
7421-93-4	Endrin aldehyde	3	U	0.53	3	6	ug/Kg
5103-71-9	alpha-Chlordane	3	U	0.5	3	6	ug/Kg
5103-74-2	gamma-Chlordane	3	U	0.46	3	6	ug/Kg
8001-35-2	Toxaphene	30	U	12	30	60	ug/Kg
SURROGATES							
2051-24-3	Decachlorobiphenyl	11.3		10 - 169		56%	SPK: 20
877-09-8	Tetrachloro-m-xylene	19.5		31 - 151		98%	SPK: 20

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-01RE	SDG No.:	D2945
Lab Sample ID:	D2945-03RE	Matrix:	SOIL
Analytical Method:	SW8081B	% Moisture:	16 Decanted:
Sample Wt/Vol:	10.09 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PD011078.D	1	06/04/12	06/06/12	PB63562

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-01	SDG No.:	d2945
Lab Sample ID:	D2945-03	Matrix:	SOIL
Analytical Method:	SW8270D	% Moisture:	16
Sample Wt/Vol:	10.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA
Extraction Type :	SOXH Decanted : N	Level :	LOW
Injection Volume :	1 GPC Factor : 1.0	GPC Cleanup :	N PH : N/A

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF056646.D	1	06/05/12	06/07/12	PB63592

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
100-52-7	Benzaldehyde	600	U	62	600	1200	ug/Kg
108-95-2	Phenol	600	U	27	600	1200	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	600	U	57	600	1200	ug/Kg
95-57-8	2-Chlorophenol	600	U	63	600	1200	ug/Kg
95-48-7	2-Methylphenol	600	U	64	600	1200	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	600	U	49	600	1200	ug/Kg
98-86-2	Acetophenone	600	U	36	600	1200	ug/Kg
65794-96-9	3+4-Methylphenols	600	U	62	600	1200	ug/Kg
621-64-7	N-Nitroso-di-n-propylamine	600	U	60	600	1200	ug/Kg
67-72-1	Hexachloroethane	600	U	53	600	1200	ug/Kg
98-95-3	Nitrobenzene	600	U	45	600	1200	ug/Kg
78-59-1	Isophorone	600	U	39	600	1200	ug/Kg
88-75-5	2-Nitrophenol	600	U	57	600	1200	ug/Kg
105-67-9	2,4-Dimethylphenol	600	U	67	600	1200	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	600	U	68	600	1200	ug/Kg
120-83-2	2,4-Dichlorophenol	600	U	45	600	1200	ug/Kg
91-20-3	Naphthalene	600	U	41	600	1200	ug/Kg
106-47-8	4-Chloroaniline	600	U	84	600	1200	ug/Kg
87-68-3	Hexachlorobutadiene	600	U	43	600	1200	ug/Kg
105-60-2	Caprolactam	600	U	55	600	1200	ug/Kg
59-50-7	4-Chloro-3-methylphenol	600	U	53	600	1200	ug/Kg
91-57-6	2-Methylnaphthalene	600	U	30	600	1200	ug/Kg
77-47-4	Hexachlorocyclopentadiene	600	U	29	600	1200	ug/Kg
88-06-2	2,4,6-Trichlorophenol	600	U	36	600	1200	ug/Kg
95-95-4	2,4,5-Trichlorophenol	600	U	83	600	1200	ug/Kg
92-52-4	1,1-Biphenyl	600	U	45	600	1200	ug/Kg
91-58-7	2-Chloronaphthalene	600	U	27	600	1200	ug/Kg
88-74-4	2-Nitroaniline	600	U	53	600	1200	ug/Kg
131-11-3	Dimethylphthalate	910	J	32	600	1200	ug/Kg
208-96-8	Acenaphthylene	600	U	30	600	1200	ug/Kg
606-20-2	2,6-Dinitrotoluene	600	U	48	600	1200	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-01	SDG No.:	d2945
Lab Sample ID:	D2945-03	Matrix:	SOIL
Analytical Method:	SW8270D	% Moisture:	16
Sample Wt/Vol:	10.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA
Extraction Type :	SOXH Decanted : N	Level :	LOW
Injection Volume :	1 GPC Factor : 1.0	GPC Cleanup :	N PH : N/A

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF056646.D	1	06/05/12	06/07/12	PB63592

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
99-09-2	3-Nitroaniline	600	U	76	600	1200	ug/Kg
83-32-9	Acenaphthene	600	U	33	600	1200	ug/Kg
51-28-5	2,4-Dinitrophenol	600	U	120	600	1200	ug/Kg
100-02-7	4-Nitrophenol	600	U	220	600	1200	ug/Kg
132-64-9	Dibenzofuran	600	U	46	600	1200	ug/Kg
121-14-2	2,4-Dinitrotoluene	600	U	36	600	1200	ug/Kg
84-66-2	Diethylphthalate	600	U	18	600	1200	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	600	U	64	600	1200	ug/Kg
86-73-7	Fluorene	490	J	45	600	1200	ug/Kg
100-01-6	4-Nitroaniline	600	U	150	600	1200	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	600	U	68	600	1200	ug/Kg
86-30-6	N-Nitrosodiphenylamine	600	U	28	600	1200	ug/Kg
101-55-3	4-Bromophenyl-phenylether	600	U	23	600	1200	ug/Kg
118-74-1	Hexachlorobenzene	600	U	48	600	1200	ug/Kg
1912-24-9	Atrazine	600	U	63	600	1200	ug/Kg
87-86-5	Pentachlorophenol	600	U	81	600	1200	ug/Kg
85-01-8	Phenanthrene	4700		32	600	1200	ug/Kg
120-12-7	Anthracene	1300		24	600	1200	ug/Kg
86-74-8	Carbazole	490	J	26	600	1200	ug/Kg
84-74-2	Di-n-butylphthalate	600	U	93	600	1200	ug/Kg
206-44-0	Fluoranthene	6200		24	600	1200	ug/Kg
129-00-0	Pyrene	5800		28	600	1200	ug/Kg
85-68-7	Butylbenzylphthalate	600	U	57	600	1200	ug/Kg
91-94-1	3,3-Dichlorobenzidine	600	U	76	600	1200	ug/Kg
56-55-3	Benzo(a)anthracene	3100		57	600	1200	ug/Kg
218-01-9	Chrysene	3200		54	600	1200	ug/Kg
117-81-7	bis(2-Ethylhexyl)phthalate	600	U	42	600	1200	ug/Kg
117-84-0	Di-n-octyl phthalate	600	U	14	600	1200	ug/Kg
205-99-2	Benzo(b)fluoranthene	3600		39	600	1200	ug/Kg
207-08-9	Benzo(k)fluoranthene	1400		56	600	1200	ug/Kg
50-32-8	Benzo(a)pyrene	2600		26	600	1200	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1100	J	39	600	1200	ug/Kg
53-70-3	Dibenz(a,h)anthracene	600	U	34	600	1200	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-01	SDG No.:	d2945
Lab Sample ID:	D2945-03	Matrix:	SOIL
Analytical Method:	SW8270D	% Moisture:	16
Sample Wt/Vol:	10.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA
Extraction Type :	SOXH Decanted : N	Level :	LOW
Injection Volume :	1 GPC Factor : 1.0	GPC Cleanup :	N PH : N/A

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF056646.D	1	06/05/12	06/07/12	PB63592

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
191-24-2	Benzo(g,h,i)perylene	1300		48	600	1200	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	600	U	47	600	1200	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	600	U	47	600	1200	ug/Kg
SURROGATES							
367-12-4	2-Fluorophenol	100		28 - 127		67%	SPK: 150
13127-88-3	Phenol-d5	96.2		34 - 127		64%	SPK: 150
4165-60-0	Nitrobenzene-d5	69		31 - 132		69%	SPK: 100
321-60-8	2-Fluorobiphenyl	77.9		39 - 123		78%	SPK: 100
118-79-6	2,4,6-Tribromophenol	93.5		30 - 133		62%	SPK: 150
1718-51-0	Terphenyl-d14	67		37 - 115		67%	SPK: 100
INTERNAL STANDARDS							
3855-82-1	1,4-Dichlorobenzene-d4	120268	5.77				
1146-65-2	Naphthalene-d8	441505	7.09				
15067-26-2	Acenaphthene-d10	225902	9.04				
1517-22-2	Phenanthrene-d10	355879	11.12				
1719-03-5	Chrysene-d12	295411	15.29				
1520-96-3	Perylene-d12	268923	17.61				

U = Not Detected
JQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02	SDG No.:	D2945
Lab Sample ID:	D2945-04	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	10.6 Decanted:
Sample Wt/Vol:	10.02 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PE004958.D	1	06/05/12	06/07/12	PB63595

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
1918-00-9	DICAMBA	110	U	44.4	110	220	ug/Kg
120-36-5	DICHLORPROP	110	U	41.4	110	220	ug/Kg
94-75-7	2,4-D	110	U	110	110	220	ug/Kg
93-72-1	2,4,5-TP (SILVEX)	110	U	36.5	110	220	ug/Kg
93-76-5	2,4,5-T	110	U	34.3	110	220	ug/Kg
94-82-6	2,4-DB	110	U	99	110	220	ug/Kg
88-85-7	DINOSEB	110	U	82	110	220	ug/Kg
SURROGATES							
19719-28-9	2,4-DCAA	216		12 - 189		43%	SPK: 500

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02	SDG No.:	D2945
Lab Sample ID:	D2945-04	Matrix:	SOIL
Level (low/med):	low	% Solid:	89.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	5500		1	0.77	2.29	4.58	mg/Kg	06/06/12	06/07/12	SW6010B
7440-36-0	Antimony	1.14	J	1	0.51	1.145	2.29	mg/Kg	06/06/12	06/07/12	SW6010B
7440-38-2	Arsenic	3.25		1	0.3	0.46	0.92	mg/Kg	06/06/12	06/07/12	SW6010B
7440-39-3	Barium	48.4		1	0.37	2.29	4.58	mg/Kg	06/06/12	06/07/12	SW6010B
7440-41-7	Beryllium	0.15	J	1	0.06	0.14	0.28	mg/Kg	06/06/12	06/07/12	SW6010B
7440-43-9	Cadmium	0.14	U	1	0.06	0.14	0.28	mg/Kg	06/06/12	06/07/12	SW6010B
7440-70-2	Calcium	5650		1	0.98	45.85	91.7	mg/Kg	06/06/12	06/07/12	SW6010B
7440-47-3	Chromium	13.4		1	0.12	0.23	0.46	mg/Kg	06/06/12	06/07/12	SW6010B
7440-48-4	Cobalt	7.3		1	0.52	0.69	1.38	mg/Kg	06/06/12	06/07/12	SW6010B
7440-50-8	Copper	51.5		1	0.29	0.46	0.92	mg/Kg	06/06/12	06/07/12	SW6010B
7439-89-6	Iron	13400		1	1.22	2.29	4.58	mg/Kg	06/06/12	06/07/12	SW6010B
7439-92-1	Lead	122		1	0.11	0.275	0.55	mg/Kg	06/06/12	06/07/12	SW6010B
7439-95-4	Magnesium	4110		1	4.2	45.85	91.7	mg/Kg	06/06/12	06/07/12	SW6010B
7439-96-5	Manganese	283		1	0.17	0.46	0.92	mg/Kg	06/06/12	06/07/12	SW6010B
7439-97-6	Mercury	0.375	*	1	0.002	0.0055	0.011	mg/Kg	06/04/12	06/05/12	SW7471A
7440-02-0	Nickel	23.8		1	0.42	0.915	1.83	mg/Kg	06/06/12	06/07/12	SW6010B
7440-09-7	Potassium	1960		1	3.21	45.85	91.7	mg/Kg	06/06/12	06/07/12	SW6010B
7782-49-2	Selenium	0.46	U	1	0.38	0.46	0.92	mg/Kg	06/06/12	06/07/12	SW6010B
7440-22-4	Silver	0.23	U	1	0.14	0.23	0.46	mg/Kg	06/06/12	06/07/12	SW6010B
7440-23-5	Sodium	266		1	2.31	45.85	91.7	mg/Kg	06/06/12	06/07/12	SW6010B
7440-28-0	Thallium	0.915	U	1	0.25	0.915	1.83	mg/Kg	06/06/12	06/07/12	SW6010B
7440-62-2	Vanadium	34.7		1	0.54	0.915	1.83	mg/Kg	06/06/12	06/07/12	SW6010B
7440-66-6	Zinc	74.2		1	0.64	0.915	1.83	mg/Kg	06/06/12	06/07/12	SW6010B

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS-TAL				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02	SDG No.:	D2945
Lab Sample ID:	D2945-04	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	11 Decanted:
Sample Wt/Vol:	10.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PC008278.D	1	06/05/12	06/07/12	PB63589

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
12674-11-2	Aroclor-1016	28.5	U	12	28.5	57	ug/Kg
11104-28-2	Aroclor-1221	28.5	U	11	28.5	57	ug/Kg
11141-16-5	Aroclor-1232	28.5	U	25	28.5	57	ug/Kg
53469-21-9	Aroclor-1242	28.5	U	11	28.5	57	ug/Kg
12672-29-6	Aroclor-1248	28.5	U	22	28.5	57	ug/Kg
11097-69-1	Aroclor-1254	28.5	U	5	28.5	57	ug/Kg
11096-82-5	Aroclor-1260	28.5	U	14	28.5	57	ug/Kg
SURROGATES							
877-09-8	Tetrachloro-m-xylene	17		10 - 166		85%	SPK: 20
2051-24-3	Decachlorobiphenyl	23		60 - 125		115%	SPK: 20

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02	SDG No.:	D2945
Lab Sample ID:	D2945-04	Matrix:	SOIL
Analytical Method:	SW8081B	% Moisture:	10.6 Decanted:
Sample Wt/Vol:	10.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PD011031.D	1	06/04/12	06/05/12	PB63562

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
319-84-6	alpha-BHC	2.85	U	0.43	2.85	5.7	ug/Kg
319-85-7	beta-BHC	2.85	U	0.6	2.85	5.7	ug/Kg
319-86-8	delta-BHC	2.85	U	0.33	2.85	5.7	ug/Kg
58-89-9	gamma-BHC	2.85	U	0.5	2.85	5.7	ug/Kg
76-44-8	Heptachlor	2.85	U	0.47	2.85	5.7	ug/Kg
309-00-2	Aldrin	2.85	U	0.33	2.85	5.7	ug/Kg
1024-57-3	Heptachlor epoxide	2.85	U	0.53	2.85	5.7	ug/Kg
959-98-8	Endosulfan I	2.85	U	0.5	2.85	5.7	ug/Kg
60-57-1	Dieldrin	2.85	U	0.43	2.85	5.7	ug/Kg
72-55-9	4,4-DDE	2.85	U	0.67	2.85	5.7	ug/Kg
72-20-8	Endrin	2.85	U	0.6	2.85	5.7	ug/Kg
33213-65-9	Endosulfan II	2.85	U	0.47	2.85	5.7	ug/Kg
72-54-8	4,4-DDD	2.85	U	0.57	2.85	5.7	ug/Kg
1031-07-8	Endosulfan Sulfate	2.85	U	0.5	2.85	5.7	ug/Kg
50-29-3	4,4-DDT	2.85	U	0.47	2.85	5.7	ug/Kg
72-43-5	Methoxychlor	2.85	U	0.57	2.85	5.7	ug/Kg
53494-70-5	Endrin ketone	2.85	U	0.43	2.85	5.7	ug/Kg
7421-93-4	Endrin aldehyde	2.85	U	0.5	2.85	5.7	ug/Kg
5103-71-9	alpha-Chlordane	2.85	U	0.47	2.85	5.7	ug/Kg
5103-74-2	gamma-Chlordane	2.85	U	0.43	2.85	5.7	ug/Kg
8001-35-2	Toxaphene	28.5	U	11	28.5	57	ug/Kg
SURROGATES							
2051-24-3	Decachlorobiphenyl	8.28		10 - 169		41%	SPK: 20
877-09-8	Tetrachloro-m-xylene	20.8		31 - 151		104%	SPK: 20

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02	SDG No.:	D2945
Lab Sample ID:	D2945-04	Matrix:	SOIL
Analytical Method:	SW8081B	% Moisture:	10.6 Decanted:
Sample Wt/Vol:	10.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PD011031.D	1	06/04/12	06/05/12	PB63562

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02RE	SDG No.:	D2945
Lab Sample ID:	D2945-04RE	Matrix:	SOIL
Analytical Method:	SW8081B	% Moisture:	10.6 Decanted:
Sample Wt/Vol:	10.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PD011079.D	1	06/04/12	06/06/12	PB63562

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
319-84-6	alpha-BHC	2.85	U	0.43	2.85	5.7	ug/Kg
319-85-7	beta-BHC	2.85	U	0.6	2.85	5.7	ug/Kg
319-86-8	delta-BHC	2.85	U	0.33	2.85	5.7	ug/Kg
58-89-9	gamma-BHC	2.85	U	0.5	2.85	5.7	ug/Kg
76-44-8	Heptachlor	2.85	U	0.47	2.85	5.7	ug/Kg
309-00-2	Aldrin	2.85	U	0.33	2.85	5.7	ug/Kg
1024-57-3	Heptachlor epoxide	2.85	U	0.53	2.85	5.7	ug/Kg
959-98-8	Endosulfan I	2.85	U	0.5	2.85	5.7	ug/Kg
60-57-1	Dieldrin	2.85	U	0.43	2.85	5.7	ug/Kg
72-55-9	4,4-DDE	2.85	U	0.67	2.85	5.7	ug/Kg
72-20-8	Endrin	2.85	U	0.6	2.85	5.7	ug/Kg
33213-65-9	Endosulfan II	2.85	U	0.47	2.85	5.7	ug/Kg
72-54-8	4,4-DDD	2.85	U	0.57	2.85	5.7	ug/Kg
1031-07-8	Endosulfan Sulfate	2.85	U	0.5	2.85	5.7	ug/Kg
50-29-3	4,4-DDT	2.85	U	0.47	2.85	5.7	ug/Kg
72-43-5	Methoxychlor	2.85	U	0.57	2.85	5.7	ug/Kg
53494-70-5	Endrin ketone	2.85	U	0.43	2.85	5.7	ug/Kg
7421-93-4	Endrin aldehyde	2.85	U	0.5	2.85	5.7	ug/Kg
5103-71-9	alpha-Chlordane	2.85	U	0.47	2.85	5.7	ug/Kg
5103-74-2	gamma-Chlordane	2.85	U	0.43	2.85	5.7	ug/Kg
8001-35-2	Toxaphene	28.5	U	11	28.5	57	ug/Kg
SURROGATES							
2051-24-3	Decachlorobiphenyl	7.59		10 - 169		38%	SPK: 20
877-09-8	Tetrachloro-m-xylene	19.9		31 - 151		99%	SPK: 20

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02RE	SDG No.:	D2945
Lab Sample ID:	D2945-04RE	Matrix:	SOIL
Analytical Method:	SW8081B	% Moisture:	10.6 Decanted:
Sample Wt/Vol:	10.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PD011079.D	1	06/04/12	06/06/12	PB63562

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02	SDG No.:	d2945
Lab Sample ID:	D2945-04	Matrix:	SOIL
Analytical Method:	SW8270D	% Moisture:	11
Sample Wt/Vol:	10.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA
Extraction Type :	SOXH Decanted : N	Level :	LOW
Injection Volume :	1 GPC Factor : 1.0	GPC Cleanup :	N PH : N/A

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF056647.D	1	06/05/12	06/07/12	PB63592

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units	
TARGETS								
100-52-7	Benzaldehyde	550	U	58	550	1100	ug/Kg	*
108-95-2	Phenol	550	U	26	550	1100	ug/Kg	
111-44-4	bis(2-Chloroethyl)ether	550	U	54	550	1100	ug/Kg	
95-57-8	2-Chlorophenol	550	U	59	550	1100	ug/Kg	
95-48-7	2-Methylphenol	550	U	61	550	1100	ug/Kg	
108-60-1	2,2-oxybis(1-Chloropropane)	550	U	46	550	1100	ug/Kg	
98-86-2	Acetophenone	550	U	34	550	1100	ug/Kg	
65794-96-9	3+4-Methylphenols	550	U	58	550	1100	ug/Kg	
621-64-7	N-Nitroso-di-n-propylamine	550	U	56	550	1100	ug/Kg	
67-72-1	Hexachloroethane	550	U	50	550	1100	ug/Kg	
98-95-3	Nitrobenzene	550	U	42	550	1100	ug/Kg	
78-59-1	Isophorone	550	U	37	550	1100	ug/Kg	
88-75-5	2-Nitrophenol	550	U	54	550	1100	ug/Kg	
105-67-9	2,4-Dimethylphenol	550	U	63	550	1100	ug/Kg	
111-91-1	bis(2-Chloroethoxy)methane	550	U	64	550	1100	ug/Kg	
120-83-2	2,4-Dichlorophenol	550	U	43	550	1100	ug/Kg	
91-20-3	Naphthalene	550	U	39	550	1100	ug/Kg	
106-47-8	4-Chloroaniline	550	U	79	550	1100	ug/Kg	
87-68-3	Hexachlorobutadiene	550	U	41	550	1100	ug/Kg	
105-60-2	Caprolactam	550	U	52	550	1100	ug/Kg	
59-50-7	4-Chloro-3-methylphenol	550	U	50	550	1100	ug/Kg	
91-57-6	2-Methylnaphthalene	550	U	28	550	1100	ug/Kg	
77-47-4	Hexachlorocyclopentadiene	550	U	27	550	1100	ug/Kg	
88-06-2	2,4,6-Trichlorophenol	550	U	34	550	1100	ug/Kg	
95-95-4	2,4,5-Trichlorophenol	550	U	78	550	1100	ug/Kg	
92-52-4	1,1-Biphenyl	550	U	42	550	1100	ug/Kg	
91-58-7	2-Chloronaphthalene	550	U	25	550	1100	ug/Kg	
88-74-4	2-Nitroaniline	550	U	50	550	1100	ug/Kg	
131-11-3	Dimethylphthalate	920	J	30	550	1100	ug/Kg	
208-96-8	Acenaphthylene	550	U	28	550	1100	ug/Kg	
606-20-2	2,6-Dinitrotoluene	550	U	46	550	1100	ug/Kg	

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02	SDG No.:	d2945
Lab Sample ID:	D2945-04	Matrix:	SOIL
Analytical Method:	SW8270D	% Moisture:	11
Sample Wt/Vol:	10.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA
Extraction Type :	SOXH Decanted : N	Level :	LOW
Injection Volume :	1 GPC Factor : 1.0	GPC Cleanup :	N PH : N/A

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF056647.D	1	06/05/12	06/07/12	PB63592

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
99-09-2	3-Nitroaniline	550	U	72	550	1100	ug/Kg
83-32-9	Acenaphthene	740	J	31	550	1100	ug/Kg
51-28-5	2,4-Dinitrophenol	550	U	110	550	1100	ug/Kg
100-02-7	4-Nitrophenol	550	U	210	550	1100	ug/Kg
132-64-9	Dibenzofuran	500	J	44	550	1100	ug/Kg
121-14-2	2,4-Dinitrotoluene	550	U	34	550	1100	ug/Kg
84-66-2	Diethylphthalate	550	U	17	550	1100	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	550	U	61	550	1100	ug/Kg
86-73-7	Fluorene	890	J	42	550	1100	ug/Kg
100-01-6	4-Nitroaniline	550	U	150	550	1100	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	550	U	64	550	1100	ug/Kg
86-30-6	N-Nitrosodiphenylamine	550	U	27	550	1100	ug/Kg
101-55-3	4-Bromophenyl-phenylether	550	U	22	550	1100	ug/Kg
118-74-1	Hexachlorobenzene	550	U	46	550	1100	ug/Kg
1912-24-9	Atrazine	550	U	59	550	1100	ug/Kg
87-86-5	Pentachlorophenol	550	U	76	550	1100	ug/Kg
85-01-8	Phenanthrene	9300	E	30	550	1100	ug/Kg
120-12-7	Anthracene	2400		23	550	1100	ug/Kg
86-74-8	Carbazole	1100		24	550	1100	ug/Kg
84-74-2	Di-n-butylphthalate	550	U	88	550	1100	ug/Kg
206-44-0	Fluoranthene	12000	E	22	550	1100	ug/Kg
129-00-0	Pyrene	12000	E	27	550	1100	ug/Kg
85-68-7	Butylbenzylphthalate	550	U	54	550	1100	ug/Kg
91-94-1	3,3-Dichlorobenzidine	550	U	72	550	1100	ug/Kg
56-55-3	Benzo(a)anthracene	6100		53	550	1100	ug/Kg
218-01-9	Chrysene	6300		51	550	1100	ug/Kg
117-81-7	bis(2-Ethylhexyl)phthalate	550	U	40	550	1100	ug/Kg
117-84-0	Di-n-octyl phthalate	550	U	13	550	1100	ug/Kg
205-99-2	Benzo(b)fluoranthene	6900		37	550	1100	ug/Kg
207-08-9	Benzo(k)fluoranthene	2600		53	550	1100	ug/Kg
50-32-8	Benzo(a)pyrene	5000		24	550	1100	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	2300		37	550	1100	ug/Kg
53-70-3	Dibenz(a,h)anthracene	480	J	32	550	1100	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02	SDG No.:	d2945
Lab Sample ID:	D2945-04	Matrix:	SOIL
Analytical Method:	SW8270D	% Moisture:	11
Sample Wt/Vol:	10.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA
Extraction Type :	SOXH Decanted : N	Level :	LOW
Injection Volume :	1 GPC Factor : 1.0	GPC Cleanup :	N PH : N/A

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF056647.D	1	06/05/12	06/07/12	PB63592

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
191-24-2	Benzo(g,h,i)perylene	2500		45	550	1100	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	550	U	44	550	1100	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	550	U	44	550	1100	ug/Kg
SURROGATES							
367-12-4	2-Fluorophenol	80		28 - 127		53%	SPK: 150
13127-88-3	Phenol-d5	87.9		34 - 127		59%	SPK: 150
4165-60-0	Nitrobenzene-d5	62		31 - 132		62%	SPK: 100
321-60-8	2-Fluorobiphenyl	74.8		39 - 123		75%	SPK: 100
118-79-6	2,4,6-Tribromophenol	99.7		30 - 133		66%	SPK: 150
1718-51-0	Terphenyl-d14	70.1		37 - 115		70%	SPK: 100
INTERNAL STANDARDS							
3855-82-1	1,4-Dichlorobenzene-d4	115585	5.77				
1146-65-2	Naphthalene-d8	415841	7.09				
15067-26-2	Acenaphthene-d10	221799	9.04				
1517-22-2	Phenanthrene-d10	360822	11.12				
1719-03-5	Chrysene-d12	287960	15.29				
1520-96-3	Perylene-d12	269992	17.61				

= Not Detected
JQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02DL	SDG No.:	d2945
Lab Sample ID:	D2945-04DL	Matrix:	SOIL
Analytical Method:	SW8270D	% Moisture:	11
Sample Wt/Vol:	10.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA
Extraction Type :	SOXH Decanted : N	Level :	LOW
Injection Volume :	1 GPC Factor : 1.0	GPC Cleanup :	N PH : N/A

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF056673.D	2	06/05/12	06/08/12	PB63592

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
100-52-7	Benzaldehyde	1100	UD	120	1100	2200	ug/Kg
108-95-2	Phenol	1100	UD	52	1100	2200	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	1100	UD	110	1100	2200	ug/Kg
95-57-8	2-Chlorophenol	1100	UD	120	1100	2200	ug/Kg
95-48-7	2-Methylphenol	1100	UD	120	1100	2200	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	1100	UD	92	1100	2200	ug/Kg
98-86-2	Acetophenone	1100	UD	68	1100	2200	ug/Kg
65794-96-9	3+4-Methylphenols	1100	UD	120	1100	2200	ug/Kg
621-64-7	N-Nitroso-di-n-propylamine	1100	UD	110	1100	2200	ug/Kg
67-72-1	Hexachloroethane	1100	UD	100	1100	2200	ug/Kg
98-95-3	Nitrobenzene	1100	UD	84	1100	2200	ug/Kg
78-59-1	Isophorone	1100	UD	74	1100	2200	ug/Kg
88-75-5	2-Nitrophenol	1100	UD	110	1100	2200	ug/Kg
105-67-9	2,4-Dimethylphenol	1100	UD	130	1100	2200	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	1100	UD	130	1100	2200	ug/Kg
120-83-2	2,4-Dichlorophenol	1100	UD	85	1100	2200	ug/Kg
91-20-3	Naphthalene	1100	UD	77	1100	2200	ug/Kg
106-47-8	4-Chloroaniline	1100	UD	160	1100	2200	ug/Kg
87-68-3	Hexachlorobutadiene	1100	UD	81	1100	2200	ug/Kg
105-60-2	Caprolactam	1100	UD	100	1100	2200	ug/Kg
59-50-7	4-Chloro-3-methylphenol	1100	UD	99	1100	2200	ug/Kg
91-57-6	2-Methylnaphthalene	1100	UD	56	1100	2200	ug/Kg
77-47-4	Hexachlorocyclopentadiene	1100	UD	54	1100	2200	ug/Kg
88-06-2	2,4,6-Trichlorophenol	1100	UD	68	1100	2200	ug/Kg
95-95-4	2,4,5-Trichlorophenol	1100	UD	160	1100	2200	ug/Kg
92-52-4	1,1-Biphenyl	1100	UD	84	1100	2200	ug/Kg
91-58-7	2-Chloronaphthalene	1100	UD	51	1100	2200	ug/Kg
88-74-4	2-Nitroaniline	1100	UD	99	1100	2200	ug/Kg
131-11-3	Dimethylphthalate	970	JD	60	1100	2200	ug/Kg
208-96-8	Acenaphthylene	1100	UD	56	1100	2200	ug/Kg
606-20-2	2,6-Dinitrotoluene	1100	UD	91	1100	2200	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02DL	SDG No.:	d2945
Lab Sample ID:	D2945-04DL	Matrix:	SOIL
Analytical Method:	SW8270D	% Moisture:	11
Sample Wt/Vol:	10.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA
Extraction Type :	SOXH Decanted : N	Level :	LOW
Injection Volume :	1 GPC Factor : 1.0	GPC Cleanup :	N PH : N/A

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF056673.D	2	06/05/12	06/08/12	PB63592

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
99-09-2	3-Nitroaniline	1100	UD	140	1100	2200	ug/Kg
83-32-9	Acenaphthene	1100	UD	63	1100	2200	ug/Kg
51-28-5	2,4-Dinitrophenol	1100	UD	230	1100	2200	ug/Kg
100-02-7	4-Nitrophenol	1100	UD	410	1100	2200	ug/Kg
132-64-9	Dibenzofuran	1100	UD	87	1100	2200	ug/Kg
121-14-2	2,4-Dinitrotoluene	1100	UD	68	1100	2200	ug/Kg
84-66-2	Diethylphthalate	1100	UD	35	1100	2200	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	1100	UD	120	1100	2200	ug/Kg
86-73-7	Fluorene	930	JD	84	1100	2200	ug/Kg
100-01-6	4-Nitroaniline	1100	UD	290	1100	2200	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	1100	UD	130	1100	2200	ug/Kg
86-30-6	N-Nitrosodiphenylamine	1100	UD	54	1100	2200	ug/Kg
101-55-3	4-Bromophenyl-phenylether	1100	UD	44	1100	2200	ug/Kg
118-74-1	Hexachlorobenzene	1100	UD	91	1100	2200	ug/Kg
1912-24-9	Atrazine	1100	UD	120	1100	2200	ug/Kg
87-86-5	Pentachlorophenol	1100	UD	150	1100	2200	ug/Kg
85-01-8	Phenanthrene	10000	D	60	1100	2200	ug/Kg
120-12-7	Anthracene	2600	D	46	1100	2200	ug/Kg
86-74-8	Carbazole	1100	JD	49	1100	2200	ug/Kg
84-74-2	Di-n-butylphthalate	1100	UD	180	1100	2200	ug/Kg
206-44-0	Fluoranthene	14000	D	45	1100	2200	ug/Kg
129-00-0	Pyrene	14000	D	54	1100	2200	ug/Kg
85-68-7	Butylbenzylphthalate	1100	UD	110	1100	2200	ug/Kg
91-94-1	3,3-Dichlorobenzidine	1100	UD	140	1100	2200	ug/Kg
56-55-3	Benzo(a)anthracene	6300	D	110	1100	2200	ug/Kg
218-01-9	Chrysene	6500	D	100	1100	2200	ug/Kg
117-81-7	bis(2-Ethylhexyl)phthalate	1100	UD	79	1100	2200	ug/Kg
117-84-0	Di-n-octyl phthalate	1100	UD	25	1100	2200	ug/Kg
205-99-2	Benzo(b)fluoranthene	7800	D	73	1100	2200	ug/Kg
207-08-9	Benzo(k)fluoranthene	3000	D	110	1100	2200	ug/Kg
50-32-8	Benzo(a)pyrene	5100	D	48	1100	2200	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1400	JD	74	1100	2200	ug/Kg
53-70-3	Dibenz(a,h)anthracene	1100	UD	64	1100	2200	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	COMP-SB-02DL	SDG No.:	d2945
Lab Sample ID:	D2945-04DL	Matrix:	SOIL
Analytical Method:	SW8270D	% Moisture:	11
Sample Wt/Vol:	10.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA
Extraction Type :	SOXH Decanted : N	Level :	LOW
Injection Volume :	1 GPC Factor : 1.0	GPC Cleanup :	N PH : N/A

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF056673.D	2	06/05/12	06/08/12	PB63592

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
191-24-2	Benzo(g,h,i)perylene	1800	JD	90	1100	2200	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	1100	UD	88	1100	2200	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	1100	UD	88	1100	2200	ug/Kg
SURROGATES							
367-12-4	2-Fluorophenol	82.5		28 - 127		55%	SPK: 150
13127-88-3	Phenol-d5	96.8		34 - 127		65%	SPK: 150
4165-60-0	Nitrobenzene-d5	61.6		31 - 132		62%	SPK: 100
321-60-8	2-Fluorobiphenyl	79.4		39 - 123		79%	SPK: 100
118-79-6	2,4,6-Tribromophenol	106		30 - 133		71%	SPK: 150
1718-51-0	Terphenyl-d14	76		37 - 115		76%	SPK: 100
INTERNAL STANDARDS							
3855-82-1	1,4-Dichlorobenzene-d4	110118	5.77				
1146-65-2	Naphthalene-d8	419520	7.09				
15067-26-2	Acenaphthene-d10	224384	9.04				
1517-22-2	Phenanthrene-d10	373950	11.12				
1719-03-5	Chrysene-d12	304555	15.29				
1520-96-3	Perylene-d12	231331	17.61				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	WSTCOMP-01	SDG No.:	D2945
Lab Sample ID:	D2945-05	Matrix:	SOIL
		% Solid:	87.1

Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity (as pH)	9.17		1	0	0	0	pH	06/05/12	06/05/12	9045C
Ignitability	NO		1	0	0	0	o C	06/05/12	06/05/12	1030
Reactive Cyanide	10	U	1	10	10	10	mg/Kg	06/07/12	06/07/12	9014
Reactive Sulfide	42		1	10	10	10	mg/Kg	06/07/12	06/07/12	9034

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	WSTCOMP-01	SDG No.:	D2945
Lab Sample ID:	D2945-05	Matrix:	SOIL
Analytical Method:	8015B	% Moisture:	12.9 Decanted:
Sample Wt/Vol:	10.07 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FD002236.D	1	06/05/12	06/05/12	PB63594

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
DRO	DRO	92692		2280	2850	5700	ug/kg
SURROGATES							
DRO SURR	DRO SURR	20.8		50 - 150		104%	SPK: 20

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	WSTCOMP-01	SDG No.:	D2945
Lab Sample ID:	D2945-05	Matrix:	SOIL
Analytical Method:	8015B	% Moisture:	12.9 Decanted:
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume	
GPC Factor :	PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FB001623.D	1		06/08/12	FB060812

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
GRO	GRO	25.5	U	14	25.5	51	ug/kg
SURROGATES							
GRO SURR	GRO SURR	16.9		50 - 150		85%	SPK: 20

U = Not Detected
LOQ = Limit of Quantitation
DL = Method Detection Limit
D = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	WSTCOMP-01	SDG No.:	D2945
Lab Sample ID:	D2945-05	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	13 Decanted:
Sample Wt/Vol:	10.03 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : N/A		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PC008279.D	1	06/05/12	06/07/12	PB63589

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
12674-11-2	Aroclor-1016	29	U	12	29	58	ug/Kg
11104-28-2	Aroclor-1221	29	U	12	29	58	ug/Kg
11141-16-5	Aroclor-1232	29	U	26	29	58	ug/Kg
53469-21-9	Aroclor-1242	29	U	12	29	58	ug/Kg
12672-29-6	Aroclor-1248	29	U	23	29	58	ug/Kg
11097-69-1	Aroclor-1254	29	U	5.1	29	58	ug/Kg
11096-82-5	Aroclor-1260	29	U	14	29	58	ug/Kg
SURROGATES							
877-09-8	Tetrachloro-m-xylene	19.9		10 - 166		99%	SPK: 20
2051-24-3	Decachlorobiphenyl	20.2		60 - 125		101%	SPK: 20

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	WSTCOMP-01	SDG No.:	D2945
Lab Sample ID:	D2945-05	Matrix:	TCLP
Analytical Method:	SW8270D	% Moisture:	100
Sample Wt/Vol:	100 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	TCLP BNA
Extraction Type :	SEPF Decanted : N	Level :	LOW
Injection Volume :	1 GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BE077738.D	1	06/05/12	06/06/12	PB63588

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
110-86-1	Pyridine	50	U	20	50	100	ug/L
106-46-7	1,4-Dichlorobenzene	50	U	2	50	100	ug/L
95-48-7	2-Methylphenol	50	U	2.4	50	100	ug/L
65794-96-9	3+4-Methylphenols	50	U	3.8	50	100	ug/L
67-72-1	Hexachloroethane	50	U	2.5	50	100	ug/L
98-95-3	Nitrobenzene	50	U	6.8	50	100	ug/L
87-68-3	Hexachlorobutadiene	50	U	2.5	50	100	ug/L
88-06-2	2,4,6-Trichlorophenol	50	U	5.6	50	100	ug/L
95-95-4	2,4,5-Trichlorophenol	50	U	4	50	100	ug/L
121-14-2	2,4-Dinitrotoluene	50	U	10	50	100	ug/L
118-74-1	Hexachlorobenzene	50	U	1.8	50	100	ug/L
87-86-5	Pentachlorophenol	50	U	17	50	100	ug/L
SURROGATES							
367-12-4	2-Fluorophenol	125		10 - 130		84%	SPK: 150
13127-88-3	Phenol-d5	102		10 - 130		68%	SPK: 150
4165-60-0	Nitrobenzene-d5	85.1		36 - 131		85%	SPK: 100
321-60-8	2-Fluorobiphenyl	99.6		39 - 131		100%	SPK: 100
118-79-6	2,4,6-Tribromophenol	144		25 - 155		96%	SPK: 150
1718-51-0	Terphenyl-d14	98		23 - 130		98%	SPK: 100
INTERNAL STANDARDS							
3855-82-1	1,4-Dichlorobenzene-d4	98689	8.68				
1146-65-2	Naphthalene-d8	369875	10.85				
15067-26-2	Acenaphthene-d10	221866	13.81				
1517-22-2	Phenanthrene-d10	435162	16.28				
1719-03-5	Chrysene-d12	477423	20.72				
1520-96-3	Perylene-d12	359864	24.44				

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.			Date Collected:	06/01/12
Project:	City Island Bridge-Bronx			Date Received:	06/01/12
Client Sample ID:	WSTCOMP-01			SDG No.:	D2945
Lab Sample ID:	D2945-05			Matrix:	TCLP
Analytical Method:	SW8270D			% Moisture:	100
Sample Wt/Vol:	100	Units:	mL	Final Vol:	1000 uL
Soil Aliquot Vol:			uL	Test:	TCLP BNA
Extraction Type :	SEPF		Decanted : N	Level :	LOW
Injection Volume :	1		GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BE077738.D	1	06/05/12	06/06/12	PB63588

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	WSTCOMP-01	SDG No.:	D2945
Lab Sample ID:	D2945-05	Matrix:	TCLP
Analytical Method:	SW8151A	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Herbicide
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PE004956.D	1	06/05/12	06/07/12	PB63587

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
94-75-7	2,4-D	10	U	3.48	10	20	ug/L
93-72-1	2,4,5-TP (SILVEX)	10	U	1.51	10	20	ug/L
SURROGATES							
19719-28-9	2,4-DCAA	355		43 - 172		71%	SPK: 500

U = Not Detected
LOQ = Limit of Quantitation
DL = Method Detection Limit
D = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	WSTCOMP-01	SDG No.:	D2945
Lab Sample ID:	D2945-05	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	50	U	1	42	50	100	ug/L	06/05/12	06/07/12	SW6010B
7440-39-3	Barium	151	J	1	40	250	500	ug/L	06/05/12	06/07/12	SW6010B
7440-43-9	Cadmium	15	U	1	5	15	30	ug/L	06/05/12	06/07/12	SW6010B
7440-47-3	Chromium	25	U	1	11	25	50	ug/L	06/05/12	06/07/12	SW6010B
7439-92-1	Lead	30	U	1	26	30	60	ug/L	06/05/12	06/07/12	SW6010B
7439-97-6	Mercury	1	U	1	0.915	1	2	ug/L	06/06/12	06/07/12	SW7470A
7782-49-2	Selenium	50	U	1	48	50	100	ug/L	06/05/12	06/07/12	SW6010B
7440-22-4	Silver	25	U	1	15	25	50	ug/L	06/05/12	06/07/12	SW6010B

Color Before:	Colorless	Clarity Before:		Texture:	CLEAR
Color After:	Colorless	Clarity After:		Artifacts:	CLEAR
Comments:	TCLP-FULL				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	WSTCOMP-01	SDG No.:	D2945
Lab Sample ID:	D2945-05	Matrix:	TCLP
Analytical Method:	SW8081B	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Pesticide
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PD011060.D	1	06/05/12	06/06/12	PB63586

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
58-89-9	gamma-BHC	0.25	U	0.055	0.25	0.5	ug/L
76-44-8	Heptachlor	0.25	U	0.069	0.25	0.5	ug/L
1024-57-3	Heptachlor epoxide	0.25	U	0.067	0.25	0.5	ug/L
72-20-8	Endrin	0.25	U	0.058	0.25	0.5	ug/L
72-43-5	Methoxychlor	0.25	U	0.042	0.25	0.5	ug/L
8001-35-2	Toxaphene	2.5	U	1	2.5	5	ug/L
57-74-9	Chlordane	2.5	U	1	2.5	5	ug/L
SURROGATES							
2051-24-3	Decachlorobiphenyl	13		10 - 192		65%	SPK: 20
877-09-8	Tetrachloro-m-xylene	18.9		10 - 172		95%	SPK: 20

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	WSTCOMP-01	SDG No.:	D2945
Lab Sample ID:	D2945-05	Matrix:	TCLP
Analytical Method:	SW8260C	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	TCLP VOA
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VH047963.D	5		06/06/12	VH060512

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-01-4	Vinyl Chloride	12.5	U	1.7	12.5	25	ug/L
75-35-4	1,1-Dichloroethene	12.5	U	2.4	12.5	25	ug/L
78-93-3	2-Butanone	60	U	6.6	60	120	ug/L
56-23-5	Carbon Tetrachloride	12.5	U	3.1	12.5	25	ug/L
67-66-3	Chloroform	12.5	U	1.7	12.5	25	ug/L
71-43-2	Benzene	12.5	U	1.6	12.5	25	ug/L
107-06-2	1,2-Dichloroethane	12.5	U	2.4	12.5	25	ug/L
79-01-6	Trichloroethene	12.5	U	1.4	12.5	25	ug/L
127-18-4	Tetrachloroethene	12.5	U	1.4	12.5	25	ug/L
108-90-7	Chlorobenzene	12.5	U	2.4	12.5	25	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	50.9		61 - 141		102%	SPK: 50
1868-53-7	Dibromofluoromethane	48.9		69 - 133		98%	SPK: 50
2037-26-5	Toluene-d8	52.6		65 - 126		105%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.8		58 - 135		94%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	130136	4.96				
540-36-3	1,4-Difluorobenzene	247953	5.67				
3114-55-4	Chlorobenzene-d5	254778	9.79				
3855-82-1	1,4-Dichlorobenzene-d4	156017	12.53				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	GW-1	SDG No.:	D2945
Lab Sample ID:	D2945-06	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
CBOD5	2	U	1	2	2	2	mg/L	06/01/12	06/01/12	SM5210B
Chloride	160		1	0.4	2.5	5	mg/L	06/07/12	06/07/12	SM4500-CL C
Flashpoint	>150.00		1	0	0	0	o F	06/04/12	06/04/12	1010A
Hexavalent Chromium	0.005	U	1	0.005	0.005	0.01	mg/L	06/01/12	06/01/12	SM3500-Cr-D
Nitrate+Nitrite	0.76		1	0.25	0.25	0.25	mg/L	06/01/12	06/01/12	300
Nonpolar Material	5	U	1	5	5	5	mg/L	06/07/12	06/07/12	1664A
pH	7.39		1	0	0	0	pH	06/01/12	06/01/12	SM4500 pH B
Phenolics	0.008	J	1	0.002	0.025	0.05	mg/L	06/05/12	06/06/12	420.1
Temperature	17.6		1	0	0	0	o C	06/01/12	06/01/12	SM2550B
TKN	0.37	J	1	0.096	0.25	0.5	mg/L	06/05/12	06/06/12	SM4500-N Org B or C
Total Nitrogen	1.13		1	0.75	0.75	0.75	mg/L	06/06/12	06/06/12	CAL
TS	1010		1	10	10	10	mg/L	06/04/12	06/04/12	SM2540B
TSS	420		1	4	4	4	mg/L	06/04/12	06/04/12	SM2540D

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	GW-1	SDG No.:	D2945
Lab Sample ID:	D2945-06	Matrix:	WATER
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-43-9	Cadmium	1.5	U	1	0.4	1.5	3	ug/L	06/05/12	06/05/12	EPA 200.7
7440-50-8	Copper	101		1	2.6	5	10	ug/L	06/05/12	06/05/12	EPA 200.7
7439-92-1	Lead	371		1	1.8	3	6	ug/L	06/05/12	06/05/12	EPA 200.7
7439-97-6	Mercury	0.56	N	1	0.07	0.1	0.2	ug/L	06/06/12	06/07/12	E245.1
7440-02-0	Nickel	30.7		1	3.7	10	20	ug/L	06/05/12	06/05/12	EPA 200.7
7440-66-6	Zinc	441	N	1	5.6	10	20	ug/L	06/05/12	06/05/12	EPA 200.7

Color Before:	Brown	Clarity Before:	Cloudy	Texture:	
Color After:	Yellow	Clarity After:	Clear	Artifacts:	
Comments:	Metals Group1				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	GW-1	SDG No.:	D2945
Lab Sample ID:	D2945-06	Matrix:	WATER
Analytical Method:	608	% Moisture:	100 Decanted:
Sample Wt/Vol:	980 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume	1
GPC Factor :	1.0 PH : 6		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PC008272.D	1	06/05/12	06/07/12	PB63591

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
12674-11-2	Aroclor-1016	0.025	U	0.02	0.025	0.05	ug/L
11104-28-2	Aroclor-1221	0.025	U	0.02	0.025	0.05	ug/L
11141-16-5	Aroclor-1232	0.025	U	0.0082	0.025	0.05	ug/L
53469-21-9	Aroclor-1242	0.025	U	0.01	0.025	0.05	ug/L
12672-29-6	Aroclor-1248	0.025	U	0.015	0.025	0.05	ug/L
11097-69-1	Aroclor-1254	0.025	U	0.012	0.025	0.05	ug/L
11096-82-5	Aroclor-1260	0.025	U	0.024	0.025	0.05	ug/L
SURROGATES							
877-09-8	Tetrachloro-m-xylene	18.4		18 - 163		92%	SPK: 20
2051-24-3	Decachlorobiphenyl	13		10 - 177		65%	SPK: 20

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	GW-1	SDG No.:	D2945
Lab Sample ID:	D2945-06	Matrix:	WATER
Analytical Method:	625	% Moisture:	100
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOCMS Group1
Extraction Type :	SEPF Decanted : N	Level :	LOW
Injection Volume :	1 GPC Factor : 1.0	GPC Cleanup :	N PH : 6

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF056584.D	1	06/05/12	06/06/12	PB63590

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
120-82-1	1,2,4-Trichlorobenzene	1.25	U	0.14	1.25	2.5	ug/L
91-20-3	Naphthalene	1.25	U	0.19	1.25	2.5	ug/L
SURROGATES							
4165-60-0	Nitrobenzene-d5	78.7		25 - 124		79%	SPK: 100
321-60-8	2-Fluorobiphenyl	77.1		20 - 129		77%	SPK: 100
1718-51-0	Terphenyl-d14	54.8		14 - 155		55%	SPK: 100
INTERNAL STANDARDS							
3855-82-1	1,4-Dichlorobenzene-d4	51071	5.83				
1146-65-2	Naphthalene-d8	226620	7.14				
15067-26-2	Acenaphthene-d10	146034	9.1				
1517-22-2	Phenanthrene-d10	299814	11.19				
1719-03-5	Chrysene-d12	265143	15.36				
1520-96-3	Perylene-d12	221008	17.72				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Report of Analysis

Client:	LIRO GROUP LTD.	Date Collected:	06/01/12
Project:	City Island Bridge-Bronx	Date Received:	06/01/12
Client Sample ID:	GW-1	SDG No.:	D2945
Lab Sample ID:	D2945-06	Matrix:	WATER
Analytical Method:	E624	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-624 ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VT004058.D	1		06/05/12	VT060412

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
1634-04-4	Methyl tert-Butyl Ether	2.5	U	0.41	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	2.5	U	0.57	2.5	5	ug/L
67-66-3	Chloroform	39		0.19	2.5	5	ug/L
71-55-6	1,1,1-Trichloroethane	2.5	U	0.3	2.5	5	ug/L
71-43-2	Benzene	2.5	U	0.26	2.5	5	ug/L
108-88-3	Toluene	2.5	U	0.17	2.5	5	ug/L
127-18-4	Tetrachloroethene	2.5	U	0.86	2.5	5	ug/L
100-41-4	Ethyl Benzene	2.5	U	0.26	2.5	5	ug/L
179601-23-1	m/p-Xylenes	5	U	0.35	5	10	ug/L
95-47-6	o-Xylene	2.5	U	0.22	2.5	5	ug/L
106-46-7	1,4-Dichlorobenzene	2.5	U	0.22	2.5	5	ug/L
1330-20-7	Total Xylenes	7.5	U	0.57	7.5	15	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	31.2		50 - 169		104%	SPK: 30
2037-26-5	Toluene-d8	28.6		66 - 137		95%	SPK: 30
460-00-4	4-Bromofluorobenzene	29.7		56 - 143		99%	SPK: 30
INTERNAL STANDARDS							
74-97-5	Bromochloromethane	248981	6.92				
540-36-3	1,4-Difluorobenzene	1595420	8.38				
3114-55-4	Chlorobenzene-d5	1231960	11.22				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution

(NO TEXT THIS PAGE)

BMP - PAGES

SPECIFICATIONS FOR CONSTRUCTION OF BEST MANAGEMENT PRACTICE (BMP) AND MITIGATION AREA

NOTICE

THE PAGES CONTAINED IN THIS SECTION ARE ISSUED FOR THE PURPOSE OF SPECIFYING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND HEREBY MADE PART OF SAID CONTRACT DOCUMENTS.

(NO TEXT ON THIS PAGE)

CONSTRUCTION OF 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND, AND CITY ISLAND STORMWATER OUTFALL BRONX, NY

SPECIFICATIONS FOR

CONTRACT HED564

SPECIFICATIONS FOR SEDIMENT AND EROSION CONTROL, GRADING AND EARTHWORK, AND LANDSCAPING FOR THE CONSTRUCTION SITES AND WETLAND MITIGATION

Bronx, New York

November 2015
Prepared for the NYC Department of Design and Construction

By Hazen and Sawyer, P.C./AKRF Engineering, P.C.
A Joint Venture

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

TABLE OF CONTENTS

CONSTRUCTION OF BEST MANAGEMENT PRACTICES

SPECIFIC PROVISIONS

Section No.	Title	Page No.
7.01	Location of Work	BMP-7
7.02	Work Included	BMP-7
7.03	Inspections Before Bidding	BMP-10
7.04	Standard Specifications	BMP-10
7.05	Inspection by the City, State and Federal Government	BMP-11
7.06	Existing Utilities	BMP-11
7.07	Permits Required	BMP-11
7.08	Land for Contractor's Use	BMP-12
7.09	Licensed Surveyor (for Engineer's Use)	BMP-13
7.10	Construction – Special Requirements	BMP-13
7.11	Transportation and Handling of Materials and Equipment	BMP-18
7.12	Protection of Materials and Equipment at the Site	BMP-20
7.13	Final Cleaning	BMP-21
7.14	OSHA Requirements	BMP-22
7.15	No Separate Payment	BMP-22
7.16	Bid Breakdown	BMP-22
7.17	Detailed Work Description of Work	BMP-22

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

STRUCTURES AND MISCELLANEOUS EQUIPMENT

Section No.	Title	Page No.
7.101	Work Included	BMP-25
7.102	Dewatering	BMP-26

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

EARTHWORK AND GRADING

Section No.	Title	Page No.
7.300	Work Included	BMP-33
7.301	Debris Removal and Disposal	BMP-34
7.307-A	Grading	BMP-41

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

LANDSCAPING AND RESTORATION

Section No.	Title	Page No.
7.400	Work Included	BMP-43
7.401	Landscaping for Terrestrial Zone and Wetland Zone	BMP-44
7.404-A	Restoration Specialist (Construction Monitor)	BMP-74
7.404-B	Erosion and Sediment Control Licensed/Certified Professional	BMP-78
7.411	Watering and Weeding During the Guarantee Period	BMP-90
7.413	Temporary Goose Exclusion Fence	BMP-93
7.417	Debris Exclusion Fence	BMP-99

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

EROSION AND SEDIMENTATION CONTROL MEASURES

Section No.	Title	Page No.
7.500	Soil Erosion and Sedimentation Control Measures	BMP-101
7.501	Maintenance of Erosion Control Measures	BMP-104
7.502	Construction Limit Fence	BMP-105
7.504-A	Silt Fence	BMP-108
7.509-A	Stabilized Construction Entrance	BMP-114
7.510	Portable Sediment Tanks	BMP-116
7.516	Turbidity Curtain	BMP-123

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

OUTFALL CONSTRUCTION

DIVISION VII

SPECIFIC PROVISIONS

7.01 LOCATION OF WORK

The project includes the installation of two water mains from Pelham Bay Park to City Island Avenue, crossing under Eastchester Bay, the construction of a 24" storm sewer pipe and outfall that discharges into Eastchester Bay, and wetland mitigation planting in City Island, Bronx, NY. The project has two main sites:

1. The entrance pit for the water main is located in Pelham Bay Park which is accessed from City Island Road. The property is owned by the New York City Department of Parks and Recreation (NYCDPR). Installation of the proposed water mains would be undertaken in accordance with a Memorandum of Understanding (MOU) between DEP and DPR.

2. The water main exit pit, location of the storm water outfall and wetland mitigation site are located along City Island Avenue, west of the terminus of the Kilroe Street right of way. The site is south of the intersection of City Island Avenue, Bridge Street and City Island Road Bridge, in City Island, Bronx, New York. The site is accessed from City Island Avenue. An easement for the site will be acquired by the New York City Department of Design and Construction (NYCDDC).

7.02 WORK INCLUDED

The work under this Contract includes erosion and sediment control measures during the installation of the water main, construction of the stormwater outfall and wetland mitigation plantings. The following descriptions of work included under this Contract are general descriptions only and shall not be construed as a complete description of the work to be performed.

A. The principal items of work include:

1. Erosion and sediment control measures during the construction

   This shall entail the erosion and sediment control measures during the installation of the water mains and construction of the storm

sewer outfall discharging into Eastchester Bay. Specifications and plans for this work are included in this set.

2. Water Main

This entails all measures required for the installation of the 20" water main from Pelham Bay Park to City Island, crossing under Eastchester Bay, as shown on the Contract Documents. These measures include but are not limited to excavation, shoring, and dewatering (as necessary) of the water main trench, and layout of the 20" water main. The specifications and plans for this work are included elsewhere in these Contract Documents, not in this set.

3. Outfall Construction for Storm Sewer Networks

This entails excavation of trenches and layout of storm sewer outfall pipelines. The specifications and plans for this work are included elsewhere in these Contract Documents, not in this set.

4. Site Restoration

The entire Project site shall be restored upon project completion as per the Contract Drawings. Specifications and plans for this work are included in this set and elsewhere in these Contract Documents.

B. Involved Agencies and Firms

Before bidding, the contractor shall become familiar with the following involved agencies and firms and their respective responsibilities in the project:

1. New York City Department of Design and Construction (NYCDDC)

The NYCDDC will administer and inspect the Contractor's work with regard to all aspects of the Contract, including managing the overall project schedule, sequencing of the project and construction. The NYCDDC will handle permit compliance in relation to the sewer outfall construction. Whenever reference is made in these specifications to "the Engineer", it means the Resident Engineer on site, hired by NYCDDC.

2. New York City Department of Environmental Protection (DEP)

This City agency will maintain the facilities where the outfall is to be re-constructed under this project.

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

3. New York City Department of Parks and Recreation (NYCDPR)

This agency owns and maintains the property site. The Contractor shall coordinate with the NYCDPR in accordance with the requirements outlined in the Contract Documents. This City agency will determine the location and tree species for any trees to be planted within the project area. The Engineer shall approve the location and species prior to the commencement of landscaping work.

4. New York State Department of Environmental Conservation (NYSDEC)

This State Agency will be issuing a tidal wetland permit authorizing work in regulated areas to be performed under this Contract. This Agency has the regulatory authority to inspect the work site in order to ensure that permit requirements are not violated.

5. Hazen and Sawyer, P.C.

This engineering firm is the design consultant for all the work contained in these specifications. They are engaged by NYCDDC.

6. United States Army Corp of Engineers

This Federal Agency issues permits for all work within Federal jurisdiction wetlands. This agency has the regulatory authority to inspect the work site in order to ensure that permit requirements are not violated.

7. Restoration Specialist (Construction Monitor)

The Restoration Specialist will be retained by the Contractor. The Restoration Specialist shall supervise all restoration work performed by the Contractor and his/her Subcontractors for the duration of the project, in accordance with the plans, specifications and directions of the Engineer. The individual or firm filling this position will be responsible for oversight of the complete outfall installation. This individual or firm will be familiar with the erosion and sediment control plan for the entire outfall site, and oversee all work in wetland areas and ensuring that the work adheres to permit requirements. The Restoration Specialist is responsible for compliance with the permit as it relates to outfall construction. The exact powers of the Restoration Specialist (Construction Monitor) are stipulated in the wetland permit.

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

C. Qualifications of Contractor/Subcontractor

1. The Contractor shall have performed at least three (3) contracts that involved the installation and maintenance of soil erosion and sediment control devices during construction of a project.

   To support the Contractor's contention that he/she is qualified, the Contractor shall be able to provide the following information in a Statement of Qualifications, as detailed in the paragraph below.

   Provide specific details on the projects (i.e., location, size cost, client, etc.). Provide client contact person's name and telephone number. Describe regulatory requirements of the erosion control devices. Describe any problems encountered during construction and operation of the devices. Discuss corrective actions taken to remedy the problem. Describe any violations issued by regulatory agencies. Describe how the violations were resolved. Provide chronological photos recording the progress of construction and operation of the erosion and sediment control devices, including preconstruction through operation during site construction and restoration after construction.

   Within three (3) days upon request by the City the Contractor shall identify a Certified Professional in Erosion and Sediment Control who will be responsible for implementation of this aspect of the project. The Contractor shall also provide a copy of the certification for the person so identified.

2. The Contractor must be able to complete and submit to NYCDDC the Statement of Qualifications described in this Section within three (3) calendar days after requested to do so by NYCDDC.

7.03 INSPECTION BEFORE BIDDING

Before bidding the Contractor shall visit the site of the work. The Contractor shall obtain all necessary information, and make his own determinations of any and all conditions which may affect in any way the performance of his work and his bid prices under these Contracts. All pertinent data and dimensions with regard to existing construction shall be verified by the Contractor.

Access to the site for inspection purposes prior to bidding is on a continual basis, since the site has public access.

7.04 STANDARD SPECIFICATIONS

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

a. Roadway Repair and Resurfacing

Unless otherwise specified, all work, materials, and equipment shall conform to the applicable sections of the City of New York Department of Transportation Standard Highway Specifications.

b. Sewer Work

Unless otherwise specified, all work, materials, and equipment shall conform to the applicable sections of the City of New York Department of Environmental Protection Bureau of Water and Sewer Operations Standard Sewer and Water Main Specifications.

c. Water Main Work

Unless otherwise specified, all work, materials, and equipment shall conform to the applicable sections of the City of New York Department of Environmental Protection Bureau of Water and Sewer Operations Standard Water Main Specifications.

7.05 INSPECTION BY THE CITY, STATE AND FEDERAL GOVERNMENT

The Contractor shall provide proper facilities for inspection and access to the work at all times, whenever it is in preparation and progress, for authorized representatives of the City, State and Federal Governments, the latter two in the presence of the Engineer.

7.06 EXISTING UTILITIES

All subsurface utility and structure information shown on the Contract Drawings were obtained from various plans and maps and field investigations, however, it is not guaranteed to be complete or accurate. It shall be the Contractor's responsibility, as outlined in NYCDOT Standard Specifications, Section 1.06.18, to locate all such necessary utilities or structures. Investigation may include digging of test pits prior to the start of construction and/or by contracting the Joint Underground Locating Service (JULS). No separate payment will be made for test pits or any other work related to locating existing utilities. During the progress of the work, the Contractor shall protect from damage any existing utilities or services within the work areas until, if required, they have been re-routed, disconnected or capped off.

7.07 PERMITS REQUIRED

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

The Contractor is advised that the Department of Design and Construction has filed a Joint Application for Permit with the New York State Department of Environmental Conservation (NYSDEC), the United States Army Corps of Engineers (USACE), and the New York State Department of State (NYSDOS). No work shall commence until the above-mentioned permit has been obtained for this project. The Contractor shall become familiar and comply with the following permits:

- New York State Department of Environmental Conservation – Excavation and Fill in Navigable Waters;
- New York State Department of Environmental Conservation – 401 Water Quality Certification;
- New York State Department of Environmental Conservation – Tidal Wetlands;
- New York State Department of Environmental Conservation – SPDES General Permit GP-0-15-002;
- U.S. Army Corps of Engineers Nationwide Permit 7 – Outfall Structures and Associated Intake Structures;
- U.S. Army Corps of Engineers Nationwide Permit 12 – Utility Line Activities;
- New York State Department of State - Coastal Consistency Concurrence;
- New York City Planning Commission Waterfront Revitalization (Coastal Zone) Consistency Determination.

The Contractor shall obtain all necessary permits as outlined in NYCDOT Standard Specifications, Section 1.06.23.

The Contractor is responsible for performing all work in compliance with all permit requirements, including the 5-year monitoring requirement required by the NYSDEC/USACE permits. No separate or additional payment shall be made to the Contractor for complying with the above requirements, and obtaining and updating of said permits. The cost of such work shall be deemed included in the prices bid for all contract items of work.

7.08 LAND FOR CONTRACTOR'S USE

It is the responsibility of the Contractor to acquire land for staging area and/or use as a construction equipment and material storage yard.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.09 LICENSED SURVEYOR (FOR ENGINEER'S USE)

A. Work Included

The Contractor shall engage the services of a New York State licensed surveyor as approved by the Engineer and reporting directly to the Engineer to make such surveys, soundings, cross sections or other measurements as may be required by the Engineer for wetland mitigation construction and restoration. Surveying services included in the item are for the sole use of the Engineer. The surveyor may be used by the Engineer to verify grades, but surveying services needed for activities not related to wetland mitigation construction is the responsibility of the Contractor and is not provided under this item.

The Contractor for this Contract shall include in his total bid a per diem cost for the services performed by the Licensed Surveyor. This cost shall be shown on the Bid Schedule of Prices as Item No. BMP-7.09.

The cost proposals shall include unit prices on a per diem basis and shall include all necessary equipment, including vehicles for the Surveyors.

The cost proposals shall be submitted to the Engineer for evaluation and selection.

B. Measurement and Payment

Measurement for payment shall be on a per diem basis. One day shall consist of any eight (8) hour time period from 7:00 AM to 6:00 PM Monday through Friday plus travel time, not including holidays. The per diem rate shall include the services of a three man surveying crew. The Engineer shall be present during the progress of Work and the Engineer shall deem as to whether a full eight hour period had been employed in completing the Work, and as to whether the Contractor has utilized his crew at the productivity output required to complete the Work as anticipated. The surveyor will submit invoices to the Engineer, which will be forwarded to the Contractor for prompt payment. Payments shall be made for invoiced costs only, with no payment for overhead and profit.

7.10 CONSTRUCTION - SPECIAL REQUIREMENTS

A. Field Measurements

The Contractor shall take all necessary measurements in the field to determine the exact dimensions for all work and verify all pertinent data and dimensions shown on the Contract Drawings.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

B. Excavated Material

Unsuitable excavated material shall be removed from the site together with all debris encountered in the excavations and the costs of such removal and disposal shall be included in the unit price bid for debris removal in this Contract.

C. Access Requirements

The Contractor is advised that he shall provide access to the sites of the work for all other Contractors and that access to the sites of the work performed under all contracts shall be closely coordinated and scheduled with all other Contractors at the various sites during the life of this Contract.

D. Connections to Existing Piping

Connections to existing piping shall be made to permit ready disconnection of equipment with minimum disturbance of adjoining piping and equipment. The Contractor shall be responsible for the exact alignment of all piping with the existing piping and associated equipment and under no circumstances will pipe springing be allowed.

E. Noise Control

The Contractor shall implement noise control measures during construction including limits on the hours of operation and compliance with sound level standards. Those measures will comply with NYC and Federal noise requirements. The Contractor shall comply with the NYC Noise Code. No separate payment shall be made for this work; the cost thereof shall be included in the bid price for other items.

F. Dust Control

During construction, all appropriate fugitive dust control measures, including watering of exposed areas and using dust covers for trucks shall be employed. These measures include satisfying Section 1402.2-9.11 of the New York City Air Pollution Code. To prevent fugitive dust from construction activities from becoming airborne, the following measures are proposed:

- Use of water or surfactant to control dust in the construction operations and during the clearing and grading of land;
- Application of water to dirt paths, materials, stockpiles, and other surfaces that can generate airborne dust over extended periods.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

Construction of accessways would be built with properly sized stone or concrete equivalent over filtering material;

- Covering open-body trucks transporting materials likely to generate airborne dust at all times when in motion; and

- Prompt removal of earth or other material from paved streets where earth or other material has been deposited by trucking or earth-moving equipment, erosion by water, or other means.

No separate payment shall be made for this work; the cost thereof shall be included in the bid price for other items.

G. Protection of Archeological Resources

The Phase 1B Study, if required, shall be conducted according to the requirements of the New York City Landmarks Preservation Commission (NYCLPC).

As determined by the NYCLPC, in order to protect specific archaeological resources where there is a significant potential impact, the Contractor shall be required to conduct a Phase 1B study (Archaeological Testing) for areas of medium and high sensitivity prior to commencement of any construction activities in these areas, as directed by the Engineer.

To perform this work, the Contractor shall obtain cost proposals from a minimum of three (3) qualified firms experienced in archeological testing.

Prior to the Contractor entering into an agreement with any Consultant(s) in order to satisfy these requirements, the Contractor shall first ascertain from the NYCDDC the related accumulated research and information already assembled on the subject. The Contractor shall forward this information to the prospective and selected consultant(s).

No separate payment shall be made for this work for performing 1B study; the cost thereof shall be included in the bid price for other items.

H. Sequence of Construction

Pelham Bay Park

All work shall be completed in accordance with the contract drawings, and upon approval of the project engineer and the restoration specialist. Stake out and receive approval from the restoration specialist for the limits of work before beginning any clearing. All work shall be done in a manner to

minimize disturbance to the natural area. The restoration specialist shall identify all trees to receive tree guards and give approval for all trees identified for removal before removal operations begins.

Landscaping is not included in construction sequencing; the contractor must receive approval for all of the landscaping work from the restoration specialist prior to construction.

Work for the proposed project occurs at two individual sites and shall be phased as approved by the engineer. The following suggested sequence applies to the Pelham Bay Park site:

1. Install perimeter erosion control measures including tree guards, silt fencing and construction limit fencing, around the work area. If clearing is required for installation of a particular measure, all measures not requiring clearing shall be installed first. Clearing of the necessary land for installation of the particular measure may then proceed.
2. Install stabilized construction entrance. The contractor shall maintain the stabilized construction entrance to prevent the deposition of materials onto the public roadway. All materials deposited onto the public roadway shall be removed immediately.
3. Perform site clearing, grubbing, debris removal and removal of existing trees as shown on the Erosion and Sediment Control Plan (Dwg. C1).
4. Install approved dewatering measures to discharge below the mean lower low water line (elev. -5.61'). A portable sediment tank, or approved equal, shall be used to treat dewatering effluent prior to discharge. Discharge location shall be in a location that will not cause erosion and must be approved by the engineer. The engineer may direct the contractor to install an approved erosion control measure such as a riprap apron for dewatering effluent if necessary to prevent erosion. Installation of such a measure will be at no additional cost and included in the price bid for all work.
5. Install two new 20" D.I. water mains from City Island Road to entry site (See new 20" Water Main Plan and Profile Drawing). Construct entry site and install water mains from entry site to exit site (See Dwg. C4 for suggested sequence of construction in the exit site).
6. Once complete, perform site restoration. The site shall be restored to existing conditions as approved by the engineer. Seed area as shown.
7. Once all areas have been stabilized, remove temporary perimeter erosion and sediment control measures. Upon removal of the silt fence and construction limit fence, stabilize and landscape the areas within these temporary erosion and sediment control measure

footprints. Upon removal of the stabilized construction entrance, excavate 0.5 feet below existing grade within the stabilized construction entrance footprint. Backfill the stabilized construction entrance footprint with clean sand to existing grade and seed.

City Island

1. Install perimeter erosion control measures including tree guard and construction limit fencing, around the work area. If clearing is required for installation of a particular measure, all measures not requiring clearing shall be installed first. Clearing of the necessary land for installation of the particular measure may then proceed.
2. Install stabilized construction entrance. The contractor shall maintain the stabilized construction entrance to prevent the deposition of materials onto the public roadway. All materials deposited onto the public roadway shall be removed immediately.
3. Perform site clearing, grubbing, debris removal and removal of existing boats and trees as shown on the Erosion and Sediment Control Plan (Dwg. C2).
4. Install approved dewatering measures to discharge below the mean lower low water line (elev. -5.61'). A portable sediment tank, or approved equal, shall be used to treat dewatering effluent prior to discharge. Discharge location shall be in a location that will not cause erosion and must be approved by the engineer. The engineer may direct the contractor to install an approved erosion control measure such as a riprap apron for dewatering effluent if necessary to prevent erosion. Installation of such a measure will be at no additional cost and included in the price bid for all work.
5. Install turbidity curtain as shown or as approved by the engineer. Install cofferdam, or other approved method, following turbidity curtain installation. Top of cofferdam shall be above the mean higher high water line (elev. 2.18') to isolate the work area from tidal influence. The work area shall not contain standing water and all work below the mean higher high water line (elev. 2.18') shall be conducted within the confines of a cofferdam, or other approved method. Construction materials including but not limited to debris, sediments and fresh concrete, shall be prevented from entering the waterways.
6. Construct exit site and install two new 20" D.I. water mains from exit site to City Island Avenue (See New 20" Water Main Plan and Profile Drawing).
7. Once installation of the water mains is complete, install storm sewer and outfall (See Outfall Profile and Details Drawing).

8. Once complete, perform site restoration. All disturbed areas shall be restored to existing conditions unless otherwise shown and as directed by the restoration specialist.
9. Install debris exclusion fence. Perform landscaping and installation of goose exclusion fence. Install goose exclusion fence as landscaping occurs such that all new plantings are immediately protected.
10. Once all areas have been stabilized, remove temporary perimeter erosion and sediment control measures. Upon removal of the construction limit fence and turbidity curtain, stabilize and landscape the areas within these temporary erosion and sediment control measure footprints. Upon removal of the stabilized construction entrance, excavate 0.5 feet below existing grade within the stabilized construction entrance footprint. Backfill the stabilized construction entrance footprint with clean sand to existing grade and seed.

7.11 TRANSPORTATION AND HANDLING OF MATERIALS AND EQUIPMENT

A. General

1. Contractor shall make all arrangements for transportation, delivery, handling and rigging of equipment and materials required for execution and completion of the work.

2. Working space on the site is limited. Equipment shall not be delivered to the site until it can be moved directly to the area where it will be utilized.

3. If necessary to move stored materials and equipment during construction, the Contractor shall move or cause to be moved materials and equipment without any additional compensation

4. The Contractor shall take all necessary provisions to prevent inadvertent deposition and spillage of excavated soils or other materials that are being transported from the project site. The Contractor must employ the use of the truck tracing pad, wheel washing stations or other equipment deemed necessary to prevent spillage and deposition from vehicles from other construction equipment.

B. Delivery

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

1. The Contractor shall arrange deliveries of products in accordance with construction schedules and in ample time to facilitate inspection prior to installation.

2. Coordinate deliveries to avoid conflict with work and conditions at the site and to accommodate the following:

   a. Work of other Contractors.

   b. Limitations of storage space.

   c. Availability of equipment and personnel for handling products.

3. Do not have products delivered to project site until related Working Drawings have been approved by the Engineer.

4. Do not have products delivered to site until required storage facilities have been provided.

5. Do not have products delivered to site until the manufacturer's recommended storage instructions have been submitted and approved.

6. Have products delivered to site in manufacturer's original, unopened, labeled containers. Keep Engineer informed of delivery of all equipment to be incorporated in the work.

7. Partial deliveries of component parts of equipment shall be clearly marked to identify the equipment, to permit easy accumulation of parts and to facilitate assembly.

8. Immediately upon delivery, inspect shipments to assure:

   a. Product complies with requirements of Contract Documents and approved submittals.

   b. Quantities are correct.

   c. Containers and packages are intact, labels are legible.

   d. Products are properly protected and undamaged.

C. Product Handling

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

1. The Contractor shall provide equipment and personnel necessary to handle products by methods to prevent soiling or damage to products or packaging.

2. Provide additional protection during handling as necessary to prevent scraping, marring or otherwise damaging products or surrounding surfaces.

3. Handle products by methods to prevent bending or overstressing.

4. Lift heavy components only at designated lifting points.

5. Materials and equipment shall at all times be handled in a safe manner and as recommended by manufacturer or supplier so that no damage will occur to them. Do not drop, roll or skid products off delivery vehicles. Hand carry or use suitable materials handling equipment.

D. Removing and Hauling Equipment and Materials

1. The Contractor shall inspect all items including all boxes, crates and packages containing equipment and materials for damage that may have occurred during shipment prior to its removal from the truck or other conveyance. Any damage shall be reported immediately to the Engineer.

2. The Contractor shall then carefully remove the equipment and materials from the truck or trucks on which it is shipped. The equipment and materials shall then be transported to the place of installation at the job site. The Contractor shall be liable for loss or damage to the equipment and materials that may occur while being unloaded, transported, stored or installed.

3. All equipment that arrives at the job site during normal working hours shall be unloaded as soon as practicable.

7.12 PROTECTION OF MATERIALS AND EQUIPMENT AT THE SITE

The Contractor shall make every effort to minimize extended storage periods of materials and equipment at the Site by judiciously scheduling deliveries to coincide with construction needs.

Storage of any mechanical or electrical equipment out of doors at any time is absolutely prohibited regardless of the protection furnished. Storage of mechanical and electrical equipment within structures at the Site will not be permitted unless the structures are enclosed.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

All mechanical equipment shall be coated, wrapped and otherwise protected from snow, rain, drippings of any sort, dust, mud, condensed water vapor, etc. during shipment, storage, and installation and until placed in service.

Should storage of mechanical equipment become necessary before it can be stored at the Site, the Contractor shall provide storage in a weatherproof warehouse.

Materials other than mechanical or electrical equipment may be stored out of doors if supported above ground surface on wood runners and protected with approved, effective and durable covers.

All storage and protection of materials and equipment at the Site shall be subjected to the approval of the Engineer.

All costs for equipment protection including warehousing or other work to meet the scheduled completion date shall be deemed to be included under the Contract and no additional payment will be made.

7.13 FINAL CLEANING

A. Final Cleaning Under This Contract

1. At the completion of the work, the Contractor for this Contract shall remove all rubbish from and about the site of the work, and all temporary structures, construction signs, tools, scaffolding, materials, supplies and equipment which he or any of his subcontractors may have used in the performance of the work. The Contractor shall broom clean paved surfaces and rake clean other surfaces of grounds.

2. The Contractor shall thoroughly clean all materials, equipment and structures installed under this Contract; all marred surfaces shall be touched up to match adjacent surfaces.

3. The Contractor shall clean all landscaped areas of all debris and any objectionable material, as determined by the Engineer, and shall remove all such debris off-site.

4. The Contractor shall remove all temporary erosion control measures and replace with final features as shown on the plans and other Contract Documents contained herein, as directed by the Engineer.

B. Cleaning Materials and Methods

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

The Contractor shall:

1. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

2. Use each type of cleaning material on only those surfaces recommended by the cleaning material manufacturer.

3. Use only materials which will not create hazards to health or property.

4. The Contractor shall only use cleaning methods approved by the Engineer.

C. Payment for Final Cleaning

No separate payment will be made for the aforementioned work, the cost thereof shall be included in the price bid for other items of this Contract.

7.14 OSHA REQUIREMENTS

The Contractor shall comply with all applicable OSHA rules and regulations regarding hazardous materials. The Contractor's specific attention is called to OSHA Regulation 29 CFR, Part 1920.120.

7.15 NO SEPARATE PAYMENT

No separate payment shall be made for the work specified in the Specific Provisions. All costs shall be included in the various Contract items unless otherwise specified.

7.16 BID BREAKDOWN

The Contractor shall submit a breakdown of the bid prices of this Contract within 15 days after the commencement date specified in the Notice to Proceed. The bid breakdown shall be by reference to every detailed specification section listed for the Contract Item, including physical quantities, material costs, unit costs, and installation costs, where applicable. In addition, separate amounts for the following shall be included in the bid breakdown:

Bond, Insurance and Mobilization
Final Working Drawings, Record Drawings

7.17 DETAILED WORK DESCRIPTION

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

Water Mains

This shall entail the construction of two new water mains spanning from Pelham Bay Park to City Island, passing under Eastchester Bay. The specifications and plans for this work are included elsewhere in these Contract Documents, not in this set.

Storm Sewer Outfalls

This shall entail the construction of a new stormwater outfall along City Island Avenue, west of the terminus of the Kilroe Street right of way. The site is south of the intersection of City Island Avenue, Bridge Street and City Island Road Bridge, in City Island, Bronx, New York. The work shall consist of the installation of a storm sewer outfall to control stormwater runoff from the surrounding area. The specifications and plans for this work are included elsewhere in these Contract Documents, not in this set.

Wetland Mitigation

This shall entail tidal wetland plantings along the shoreline adjacent to the City Island stormwater outfall at the terminus of the western end of the Kilroe Street right of way, which intersects with City Island Avenue, Bronx, New York.

Specification Section

Specific Provisions

7.09	Licensed Surveyor

Structures and Misc. Equipment

7.101	Work Included
7.102	Dewatering

Earthwork and Grading

7.300	Work Included
7.301	Debris Removal and Disposal
7.307-A	Grading

Landscaping and Restoration

7.400	Work Included
7.401	Landscaping for Terrestrial Zone and Wetland Zone
7.404-A	Restoration Specialist
7.404-B	Erosion and Sediment Control Licensed/Certified Professional
7.411	Watering and Weeding During the Guarantee Period

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.413	Temporary Goose Exclusion Fence
7.417	Debris Exclusion Fence

Erosion and Sedimentation Control Measures

7.500	Soil Erosion and Sedimentation Control Measures
7.501	Maintenance of Erosion Control Measures
7.502	Construction Limit Fence
7.504-A	Silt Fence
7.509-A	Stabilized Construction Entrance
7.510	Portable Sediment Tanks
7.516	Turbidity Curtain

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

STRUCTURES AND EQUIPMENT

7.101 WORK INCLUDED

Under structures and equipment work, Contractor shall furnish all labor, materials and equipment and shall do all work as specified herein and as shown on the Contract Drawings, including all incidental and appurtenant work required for a complete job.

The work shall include items of work specified under the following sections:

Section No.	Title
7.102	Dewatering

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.102 DEWATERING

A. Description of Work

The Contractor shall furnish, install, operate and maintain dewatering equipment as required, for construction work as specified herein. The dewatering equipment shall include, but not be limited to, the following equipment items:

1. Pumps
2. Piping
3. Accessories
4. Wells.

B. General Requirements

1. General Specifications - Work performed under this Section shall be in conformance with the Standard Sewer Specifications.

2. Examination of the Sites - The Contractor shall take all steps that he considers necessary to familiarize himself with the surface and subsurface conditions at the site, and shall obtain the data that is required to analyze the water and soil conditions at the site.

3. Shop Drawings - The Contractor shall submit to the Engineer for approval shop drawings and any other material required to substantiate conformance with the requirements set forth in the specifications. Shop drawings shall include a detailed plan of operations.

C. Dewatering

1. General Information - The Contractor shall perform dewatering activities to insure that all construction is performed under dry conditions. If a well point system is proposed, the Contractor shall utilize a licensed well driller. The Contractor shall always drill down to sand or gravel layer when available and when it is below the lowest excavated invert.

   The Contractor shall operate the dewatering pumps continuously, a day before and during construction until all associated work within the influence zone of the well point have been completed.

2. Care and Disposal of Water - Care of water shall be in accordance with Section 15 - 15.25 of the Environmental Conservation Law.

Water from open cut and/or sheeted excavations, manholes, structures, trenches, or from whatever source, shall be disposed of strictly in accordance with methods approved by the Engineer.

The Contractor shall submit proposed dewatering methods to the New York State Department of Environmental Conservation for the required permits. If a well point dewatering system is proposed, the Contractor shall utilize a licensed well driller. Contractor shall contact NYSDEC a minimum of two (2) weeks in advance of dewatering system startup.

When required by the Engineer, such water shall be passed through a settling basin and tank of acceptable size and shape and equipped with an overflow. Each settling basin shall be cleaned as required and as ordered by the Engineer.

Sufficient water to flush all sewers and drains shall be provided by the Contractor when necessary. If any sewer, drain, catch basin, inlet or gutter, that receives dirty water attributable to the Site, should become filled or partially filled with sediment or debris, the Contractor shall promptly and satisfactorily remove such deposits.

D. Design Criteria

1. Provide dewatering system which will effectively reduce hydrostatic pressure and lower groundwater levels below excavation levels as necessary for safe and proper prosecution of the work and which will result in obtaining stable, substantially dry subgrade for prosecution of subsequent operations.

2. Design dewatering methods so that the effluent discharge from the sediment control measures (sump pit, sediment tank) does not impact surface water using the following protocol which was developed to monitor dewatering effluent discharge:

a. Monitoring of Dewatering Operations

Prior to the start of dewatering operations, a visual inspection of the installation of the sediment control measure(s) such as a dewatering sump pit and/or a portable sediment tank shall be made by the Engineer. Upon commencement of dewatering effluent discharge from the sediment control measures, at least three turbidity

measurements of the effluent shall be conducted over a 15 minute-period using the following methodology. If the arithmetic mean of these three turbidity measurements is greater than the ambient turbidity level, all dewatering operations shall be discontinued until the Engineer is consulted regarding additional control measures.

b. Determination of Ambient Turbidity

Ambient turbidity levels of surface waters shall be determined using a Hanna Instruments HI 93703 Portable Microprocessor Turbidity Meter available from Hanna Instruments, Inc., Woonsocket, RI or Orbeco Hellige Portable Turbidity or LaMotee Portable Turbidimeter or equivalent approved by the Engineer. Ambient turbidity measurements shall be collected under dry weather conditions. Dry weather conditions are defined as no precipitation in the preceding 48 hours. A minimum of three turbidity measurements shall be collected using as follows:

- Water samples shall be collected a minimum of 20 feet upstream of the work area prior to commencement of any construction activity.
- Water samples shall be collected without disturbing stream bank or stream bed sediments.
- The turbidity measurements shall be conducted according to the instructions provided in the unit's Operational Guide which are summarized below.
- After the meter has been turned on, fill a clean cuvet up to one quarter inch from its rim with thoroughly agitated sample.
- Allow sufficient time for bubbles to escape before securing the cap.
- Wipe the outside of the cuvet thoroughly with a lint-free tissue.
- Place the cuvet into the cell of the meter.

- Press the Read key and the LCD will display a blinking "SIP" (Sampling in Process). The turbidity value will appear after approximately 25 second.

The arithmetic means of the three dry weather upstream turbidity measurements shall be the ambient turbidity level. Turbidity shall be measured in Nephelometric Turbidity Units (NTUs).

E. Submittals

Submit the following for approval:

1. Working Drawings

a. Type of dewatering system proposed, showing arrangement, location and depths of proposed system, complete description of equipment and materials to be used, procedure to be followed, standby equipment, standby power supply and proposed location(s) of points of discharge of water.

b. Obtain approval from the Engineer and appropriate regulatory agencies prior to installation of system.

F. Job Conditions

1. Subsurface Conditions

a. Subsurface investigations and groundwater level determinations shall be conducted by the Contractor prior to implementation as specified herein.

2. Responsibilities

a. Select and install dewatering system to accomplish groundwater control as specified.

b. Monitor quality of discharge from dewatering system to determine if soil particles are being removed by system.

c. Measure to ascertain if movement is caused in adjacent areas by dewatering operations; take approved measures to minimize such movement.

d. Take measures to prevent damage to property.

e. Repair as approved damage, disruption or interference resulting directly or indirectly from dewatering operations.

f. Remove sediments from all intercepted groundwater or surface water as specified herein and approved by the Engineer and the jurisdictional agency concerned. Under no circumstances shall the Contractor directly discharge, without treatment, into the drainage channel or creek.

G. Sump Pit

The Contractor, at the direction of the Engineer shall provide a stone filled pit with perforated standpipe/nozzle wrapped with filter fabric in which intercepted groundwater is pumped to an approved location.

The size and shape of the sump pit will vary due to site conditions. The size of pump should be determined from manufacturer's specifications.

1. The standpipe shall be a perforated 12"-24" diameter corrugated metal or PVC pipe.

2. A base of 2" aggregate shall be placed in the pit to a depth of 12". After installing the standpipe, the pit surrounding the standpipe shall then be backfilled with 2" clean aggregate.

3. The standpipe shall extend 12"-18" above the lip of the pit.

4. The standpipe shall be wrapped with filter cloth before installation. If desired, 1/2" x 1/2" hardware cloth may be placed around the standpipe, prior to attaching the filter fabric. This will increase the rate of water seepage into the pipe.

H. Surface Drainage

1. Intercept and divert surface drainage away from BMP or other excavations, wells by use of dikes, ditches, swales, open stone lined channel, temporary diversion pipes which could be either on the surface or buried, sumps or other means. To properly install buried diversion pipe the contractor may be required to excavate.

2. Design surface drainage systems to prevent erosion on or off the site or unwanted water flow.

3. Remove surface drainage system when no longer required.

4. Remove debris and restore site(s) to original conditions.

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

I. Drainage of Excavated Areas

1. Provide and maintain ditches of adequate size to collect surface and subsurface water and seepage which may enter excavations and divert water into sump so that it can be drained or pumped into drainage channels as approved by the Engineer and the jurisdictional agency concerned.

2. Install settling basins or other approved apparatus as necessary to reduce amount of fine particles carried by water diverted away from excavation.

3. When no longer necessary, backfill and seal drainage ditches, sumps and settling basins with approved material.

J. Execution

1. Install dewatering system as specified and with the approval of the Engineer.

2. Demonstrate by approved methods that no soil particles are present in water after 12 hours of initial pumping or draining and additionally as directed.

3. Dispose of precipitation and subsurface water away and clear of the work area. Keep excavation dry.

4. Maintain continuous and complete effectiveness of the installation.

5. Maintain water level at such elevation that no damage to structure or plant material can occur because of excessive hydrostatic pressure. In any event, maintain water level two feet minimum below bottom of subgrade until sufficient concentrate work or backfilling or both has been completed to adequately offset uplift pressures.

K. Dewatering System Removal

1. Remove and dispose of all stone, filter fabric and piping that comprise curtain drains and/or sump pits used in dewatering in accordance with Federal, State and local regulations at a permitted site.

2. Backfill remaining space as necessary to restore surface and subsurface to its original or proposed condition in accordance with the Engineer's approval.

L. No Separate Payment

Dewatering work shall be performed by the Contractor only as directed by the Engineer. The cost for all labor, materials and equipment required for the Dewatering shall be deemed included in the bid price for other Contract Items. No separate payment shall be made for Dewatering.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

EARTHWORK AND GRADING

7.300 Work Included

Under earthwork and grading, the Contractor shall provide all labor, material, tools and equipment necessary to complete the execution of the work in complete accordance with the Specifications and all Contract Drawings. The work shall include items of work specified under the following sections.

Section Number	Title
7.301	Debris Removal and Disposal
7.307-A	Grading

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.301 DEBRIS REMOVAL AND DISPOSAL

A. Description of Work

Under this item, the Contractor shall remove all debris and objectionable material in the work areas. Debris such as household, yard wastes and construction fill, fencing, abandoned structures, stones, wood as well as construction debris and any other objectionable debris such as the two small boats shown on the Contract Drawings, shall be removed from the specific areas within the limits of the Contract, in accordance with the plans and specifications as directed by the Engineer. Removal of fallen trees which are resting on the ground shall be included in this item. The removal and disposal off-site of the following items shall be included in this Item: abandoned vehicles, large appliances, tires, auto engines, other auto debris, scrap pieces of metal, plastic, wood, asphalt and concrete rubble, other dumped fill, household waste and yard waste. This work is to be done before installation of guide rail and/or landscaping activities and other pertinent work of this Contract.

Stones deemed suitable for reuse shall be stockpiled on-site at a location determined by the Engineer. Stones deemed not useful for contract purposes shall be removed by the Contractor from the site.

The Contractor shall carefully protect all trees, shrubs and other growth to remain, and shall be liable for any and all damages to property caused by Debris Removal operations. All trees, plants, and constructed features damaged during Debris Removal shall be replaced or restored to their original condition to the satisfaction of the Engineer.

This item shall apply only to those areas not covered by the item, Clearing, Grubbing and Removals. All debris removal in areas covered by Clearing, Grubbing and Removals shall be paid for under the unit price bid for Clearing, Grubbing and Removals.

B. Construction Methods and General Removal Protocol

All removal of debris from wooded areas, marshes, ponds and stream beds shall be performed by hand, except those areas that can be reached by machines located on paved roads or hard-packed open surfaces. Debris shall be removed to the nearest street edge for removal by the Contractor.

In sensitive natural areas, the removal of debris may cause more damage to the landscape than the benefits derived from the clean-up. Therefore, for debris that is inaccessible from a hard surface, the Contractor shall consult with the Engineer to decide if it shall be removed. Engineer will inform the

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

Contractor of any debris items not to be removed due to inaccessibility and anticipated damage to soils and vegetation.

Every effort to protect overhanging branches from damage by machines shall be taken. No plant material shall be removed expect as ordered by the Engineer.

1. Where accessible from paved road or existing packed dirt road, use front-end loader and/or backhoe to remove items to nearest street. Heavy machinery must remain on paved/hardened surfaces.

2. With the consent of Engineer, remove debris from wooded, field, or marsh areas by hand. Use existing trails where possible. For marsh areas, choose an entry point that minimizes the impact on vegetation. Blow torches, hand tools, and wheel barrows can be used to disassemble and remove large items. In order to minimize leakage from vehicles, separately remove and dispose of fluid-containing car parts.

3. With the consent of Engineer, remove items in open water by hand, unless of large enough size to warrant the use of a winch. In both cases, choose an entry point that will have the least impact on the shoreline, considering both the edge vegetation and bank stability. If using a winch, attach chains to the object and pull to shore. The vehicle housing the winch must remain on a paved or hardened surface. Once on shore, remove the debris according to the land conditions (i.e. by hand or with heavy equipment).

C. Measurement and Payment

The quantity to be measured for payment shall be as described herein. The quantity shall be for debris removal within the specified Work Areas.

Measurement shall be made in containers and/or vehicles, and the quantity to be paid for will be eight-tenths (8/10) of the yardage determined by such measurements.

The price bid shall be unit price per cubic yard for debris removal and disposal as indicated on the BID SCHEDULE OF PRICES Item No. BMP-7.301. The bid price shall constitute full compensation for all materials, labor, equipment, and work incidental thereto, necessary to complete this item in accordance with the plans and specifications to the satisfaction of the Engineer.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.302 CLEARING, GRUBBING AND REMOVALS

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.303 TEMPORARY WOODEN TREE GUARDS

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.303–A EXCAVATION

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.304 CRUSHED STONE

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.306 TREE REMOVAL AND DISPOSAL

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.307-A GRADING

A. Description of Work

The Contractor shall furnish all labor, materials, equipment and services necessary to perform all grading as indicated on the Contract Drawings and as specified herein.

B. General Requirements

1. General Specifications - Except as modified and supplemented hereinafter in the Detailed Specifications, work performed under this Section shall conform to the NYCDDC Sewer Construction General Specifications.

2. Shop Drawings - The Contractor shall submit to the Engineer for approval shop drawings and other documentation required to show conformance with the requirements set forth on the Contract Drawings and these Specifications. Shop drawings shall include, but not be limited to, the requirements for shop drawings as specified in the General Specifications.

C. Grading

Grading – The Contractor shall perform filling, compacting, and grading of the indicated areas of site, including minor cutting and filling high and low areas, and leveling such areas to elevations and within limits shown on the Contract Drawings. All work shall be performed in accordance with the applicable requirements of the NYCDDC Sewer Construction General Specifications.

Any grading below the mean higher high water (MHHW) line should be done in the dry during periods of low tide.

D. Compaction

1. Restoration Areas – Compaction shall not be done in landscaped areas.

2. Other Areas – Each layer of fill or backfill shall be compacted by a minimum of four complete passes with an approved tamping roller, pneumatic-tired roller, three-wheel power roller, or other approved compaction requirement. Compaction shall not be less than 95 percent of the maximum density modified proctor as determined by ASTM D1557, Method D.

3. Field Control – Sufficient in place density tests shall be performed by the Contractor in order to satisfy the Engineer that the specified

density is being obtained. These tests shall be made at no cost to the City and shall be made using the calibrated sand cone method (ASTM D1556) or other method as determined by the Engineer.

E. Finished Excavation, Fills, and Embankments – All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from blade-grader operations. Surfaces shall be finished not more than 0.15 foot above or below the established grade or approved cross section.

F. Protection – Newly graded areas shall be protected from traffic and erosion, and any settlement or washing away that may occur from any cause, prior to acceptance, shall be repaired and grades re-established to the required elevations and slopes, at no additional expense to the City.

The Contractor shall provide temporary ground cover sufficient to restrain erosion on all disturbed areas upon which further active construction is not taking place.

G. Measurement and Payment

The quantity to be measured for payment under the pay item Grading shall be the total number of square feet of work area graded. The contract price per square foot for grading shall be as indicated on the BID SCHEDULE OF PRICES Item No. BMP-7.307-A. The bid price shall constitute full compensation for labor, materials, equipment and work incidental thereto, necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

LANDSCAPING AND RESTORATION WORK

7.400 Work Included

Under landscaping and restoration work, the Contractor shall provide labor, materials, tools and equipment necessary to complete the execution of the work in complete accordance with the Specifications and all Contract Drawings. The work shall include items of work specified under the following sections.

Section Number	Title
7.401	Landscaping for Terrestrial Zone and Wetland Zone
7.404-A	Restoration Specialist (Construction Monitor)
7.404-B	Erosion and Sediment Control Licensed/Certified Professional
7.411	Watering and Weeding During the Guarantee Period
7.413	Temporary Goose Exclusion Fence
7.417	Debris Exclusion Fence

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.401 LANDSCAPING FOR TERRESTRIAL ZONE AND WETLAND ZONE

A. Work Included

Under these items, the Contractor shall furnish all labor, materials, equipment and services necessary for the proper execution of all landscaping work, as specified herein and as shown on the Contract Drawings, including all incidental and appurtenant work required for a complete job. In addition, the contractor will also furnish and deliver Permanent Seed Mix as directed by the Engineer.

B. General Requirements

1. Reference Standards

   a. American Association of Nurserymen, Inc., (American National Standards Institute) Nursery Stock (Z60.1)

   b. American Joint Committee on Horticultural Nomenclature Standardized Plant Names.

   c. A Checklist of New York State Plants, Contributions to a Flora of New York State, Checklist III, Bulletin #458, Richard S. Mitchell, State Botanist, New York State Museum, 1986.

   d. Gleason, The Late Henry A. and Arthur Cronquist. 1991. Manual of the Vascular Plants of Northeastern United States and Adjacent Canada, 2nd ed, New York Botanical Garden.

   e. Mitchell, Richard S. and Gordon C. Tucker. 1997. A Revised Checklist of New York State Plants, Bull. #490, New York State Museum.

C. Quality Assurance

1. Source Quality Control:

   a. If private nursery sources are used, they must be within a 250-mile radius of the planting site. All specified plants shall have also been grown in the same USDA climatic zone as that of the planting site.

   All seed and original stock material for herbaceous plants shall have been collected from locally adapted ecotypes

within a one-hundred mile radius of the project site. Plant material may have to be contract grown in order to meet this requirement.

No substitutions of specified plants will be accepted without prior approval of the Engineer or his/her duly authorized representative.

b. General. Ship landscape material with certificates of inspection when required by governmental authorities. Comply with governing regulations applicable to landscape material.

c. Packaged Material. Package standard products with manufacturer's certified analysis. For other material, such as topsoil, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agricultural Chemists, wherever applicable, or as further specified.

d. All seed shall be interagency certified under the auspices of a State Seed Improvement Cooperative and must bear their seals of certification on bag. Permanent seed shall be 75% Pure Live Seed minimum. Weed content of seed lots shall not exceed 0.25 percent. All seed shall be free of noxious weeds. Provide fresh, clean, new-crop seed complying with the tolerance for purity and germination established by the Official Seed Analysts of North America. Provide seed of the species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed.

e. Comply with governing regulations applicable to wetland and landscape materials including certification that tidal wetland plants have been acclimated to 15 to 25 parts per thousand salinity for a period of not less than two (2) weeks prior to installation.

2. Trees and plants shall be specified as in the Contract Documents. Nurseries which collect plants from the wild shall be rejected. No substitutions shall be permitted, except as authorized in writing by Engineer. If specified landscape material is not obtainable, submit proof of non-availability to Engineer, together with proposal for use of equivalent material. All plants specified within this Contract are native to the State of New York. Species native to this region, but not listed as native within *A Checklist of New York State Plants* may be accepted on a case-by-case basis.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

3. The Contractor shall provide trees and plants of quantity, size, genus, species and variety shown and scheduled in the Contract Documents for landscape work and complying with recommendations and requirements of ANSI Z60.1 "American Standard for Nursery Stock" and the Manual of Vascular Plants of the Northeastern United States and Adjacent Canada. The Contractor shall provide healthy, vigorous stock, grown in a recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae and defects such as knots, sun-scald, injuries abrasions, or disfigurement. Contractor shall submit certification that wetland plants are procured at least six months prior to scheduled planting.

4. All plants furnished under this Item shall be true to name. Plant names shall agree with the nomenclature of Standardized Plant Names as adopted by the American Joint Committee on Horticultural Nomenclature, 1942 Edition. Size and grading shall conform to those of the American Association of Nurserymen. All wetland plants shall come from Bronx stock or within 250-mile radius of Bronx.

5. Certified analyses by a recognized laboratory shall be submitted by the Contractor for approval by the Engineer for topsoil before delivery to the site. Analyses must include mechanical analysis, magnesium, nitrogen, potassium, and phosphorus levels, soluble salts, pH and organic matter. Standards and formatting for topsoil analyses shall conform to those of Cornell Cooperative Extension of Nassau County. Associated costs and additional guidelines for topsoil analyses shall be as specified NYCDOT Specifications.

6. Inspection:

   a. The Engineer shall inspect trees and shrubs at place of growth before planting, for compliance with requirements for genus, species, variety, size and quality. Contractor shall be responsible for all inspection costs beyond a 50-mile radius from New York City.

   b. Plant materials shall be inspected by the Engineer upon arrival at the job site and prior to planting. Any materials not in compliance with specifications shall not be accepted and shall be removed from the job site immediately.

   c. The Engineer retains the right to further inspect trees for size and condition of balls and root systems, insects, injuries and

latent defects, and to reject unsatisfactory or defective material at any time during progress of work. The Contractor shall remove rejected trees immediately from project site.

d. Tagged samples of plant materials shall be delivered to the site and planted in locations approved by the Engineer. These tagged samples shall be maintained, protected and used as standards for comparison with the plants furnished for the work.

e. The Contractor shall be responsible for all certificates of inspection of plant material that may be required by Federal, State or other authorities to accompany each shipment of plants. On arrival, the certificates shall be filed with the Engineer. The Engineer shall receive a copy of each shipping invoice immediately after the delivery has arrived at the job site.

D. Submittals

The General Contractor shall submit the following information (as listed in 1. through 4.) for approval within ten working days following the date in the Notice to Commence Work:

1. Subcontractors. Subcontractors proposed for landscaping and associated restoration and site work must be approved by the Engineer prior to start of work. The Contractor shall submit at least three (3) alternative Subcontractors to the Engineer for review and approval. The Subcontractors proposed shall be evaluated on the following criteria, prioritized in descending order:

a. The Contractor shall submit a minimum of three (3) projects similar in scope and type (i.e., location, size, cost, client, plant species, time of planting, etc.) within the last five years whereby the Contractor was directly responsible for the installation, restoration and maintenance of native habitats and wetlands. References and xerographic reproductions of photographs of the projects shall be submitted. Projects shall not be more than five years old. Provide client contact person's name and telephone number. Describe any problems encountered during construction and corrective action taken to remedy the problem. Describe any violations issued by NYSDEC or any other regulatory agency. How were the violations resolved. Enclose copies of applicable wetland permits. Provide chronological photos recording the progress of the restoration and/or creation efforts, including

preconstruction through completion. Include any required sign-offs from client and provide a list of all plants replaced on site.

b. Demonstrated capacity to accomplish the work in the required time including qualification of experienced foreman and key personnel.

c. Experience in digging and transplanting field stock.

d. Experience with City agencies, such as the Department of Parks and Recreation, Central Park Conservancy, Botanic Gardens, HPD and/or the Port Authority.

e. Experience with State or Federal Agencies, particularly with experience in conducting mitigation pursuant to USACE or NYSDEC requirements.

f. Wetland/landscape contractor shall have performed at least three (3) contracts that involved the installation and maintenance of soil erosion and sediment control devices during construction of the project. The projects shall be at least three (3) years old and successful.

g. Other references or experience deemed appropriate to obtaining approval.

2. List of growers/nurseries.

3. Certified arborist or nurseryman, experienced in tree pruning and removal.

4. List of all materials and certificates specified within this Item.

The General Contractor shall submit the following information (as listed in 5 through 8) prior to construction:

5. Certificates:

a. All necessary State, Federal and other inspection certificates as may be required by law.

b. Two (2) copies to the Engineer of manufacturers' or vendors' certified analysis for soil treatments and fertilizer materials shall be submitted with samples.

c. Certification and guarantee that all plant material is true to name and in conformance with these specifications.

d. The invoice or a written statement showing the size and grade of materials received or shipped, together with the source and health of the plant material and verification that balled and burlapped plants were sprayed with an anti-desiccant within 48 hours prior to digging. No plants shall be accepted that have been collected from property other than that owned or leased by a nursery.

e. Certification that all herbaceous plant material was grown from seed or stock collected from locally adapted ecotypes within a one-hundred mile radius of the project site.

f. Certificates from seed vendors: certified statement for each seed mixture required, stating botanical and common name, percentage by weight and percentages of purity, germination, and weed seed for each species.

6. Planting Schedule. Submit proposed planting schedule within one month of official Notice to Commence Work, indicating dates for each type of landscape work during normal seasons and as specified in the Contract for such work in area of site. Included shall be a schedule of nursery visits for the Restoration Specialist to tag plant material. Correlate from date of substantial completion. Once accepted, revise dates only as approved in writing by the Engineer, after documentation of reasons for delays.

7. List of equipment, methods of operation, and maintenance plant, including methods for protection of existing vegetation.

8. Manufacturer's Literature. Manufacturer's literature for all materials furnished shall be submitted with samples of same.

9. The Contractor is required to perform a separate germination test on the seed mixes to be used on this project prior to submitting the seed mix and supplier. The results of the germination test shall be included in with the information submitted to the Engineer for review and acceptance. The Contractor is advised that these tests can run two-months or more and should be prepared to have these tests completed in sufficient time for the next seeding season. Seed shall conform to all applicable state and federal regulations and to test provisions of the Association of Official Seed Analysts. There shall be no exceptions.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

10. The Landscape Subcontractor shall submit a watering and weeding plan and maintenance schedule prior to the installation of plant material, to be approved by the Engineer with consultation from the Restoration Specialist. The plan shall include proposed methods of watering and weeding, including but not limited to tree gators (bags), sprinklers, drip hoses, irrigation, tanker vehicles and hand watering, etc., as well as manual weeding and weeding tools. No additional payment will be made for watering and weeding during installation and during the three year guarantee period.

    The approved plan and schedule do not relieve the Contractor in any way from any aspect of the replacement of dead plant material. The Landscape Subcontractor may alter the maintenance schedule based on weather and field conditions.

11. The Contractor shall submit a sequence of construction for work to the Engineer for approval. The proposed sequence of work shall conform with any Special Conditions stated in any USACE Permit or NYSDEC Permit specific to this project.

12. Final planting plan, based on the post-excavation field topographic survey, including location of actual planting areas and densities for each ecological community, sediment control fence, and other required work.

13. Sediment control fence and goose exclusion fencing plan layout and details illustrating fence height, location of posts.

14. Submit a monitoring plan that meets the requirements of Section 7.404-A.G. The monitoring plan shall include hydrology, vegetation, and soils monitoring to document that the mitigation and restoration areas meet the criteria established in the USACE 1987 Wetland Delineation Manual. An action plan for addressing failures or deviation from goals shall also be included. The monitoring plan shall also satisfy the following specific requirements:

    a. The National Wetlands Mitigation Action Plan (December 2002).

    b. Compensatory Mitigation Guidelines and Mitigation Checklist for Review of Mitigation Plans, USACE, New York District, 2004, Section I Monitoring Plan and Report, and Section J Maintenance and Adaptive Management Plan.

c. New York State Salt Marsh Restoration and Monitoring Guidelines. NYSDEC, December 2000, Section 7 Salt Marsh Restoration – Recommended Monitoring Plan.

d. The monitoring plan shall conform with any Special Conditions stated in any USACE Permit or NYSDEC Permit specific to this project.

E. Product Delivery, Storage and Handling

1. Delivery of Materials:

a. Packaged Materials. Deliver packaged materials in unopened bags or containers, each bearing the name, warranty, and trademark of the producer and the composition, analysis and the weight of the material. Contractor shall notify Engineer 48 hours in advance of delivery of all plant material.

b. Trees and Plants. The Contractor shall provide trees and plants of the stock type and quantities shown on the Contract Drawings. Do not prune prior to delivery unless otherwise approved by the Engineer. Do not bend or bind-tie trees or plants in such a manner as to damage bark, break branches or destroy natural shape. Provide protective covering during delivery, and insure that all balled and burlapped stock, container stock, tube stock, and/or bare root material is handled properly and is not dropped.

c. All plant materials shall be protected from drying out and from wind damage during delivery.

d. The Contractor shall deliver trees and plants after preparations for planting have been completed and plant immediately. If planting is delayed more than 6 hours after delivery, set trees and plants in shade, protect from wind, weather and mechanical damage, and keep roots moist by covering with mulch, burlap or other acceptable means of retaining moisture. Water as necessary.

e. The Contractor shall not remove container grown stock from container until planting time.

f. Material should be planted in the ground immediately after delivery to site. Plants should be covered with damp-not wet-

leaf compost while awaiting ground installation. Do not allow the plants to dry out or freeze.

g. Fertilizer delivered to the job site shall be in original, unopened containers bearing the manufacturer's chemical analysis and essential information. Fertilizer containers shall be protected from exposure to precipitation and direct sunlight.

h. All materials shall be stored in upland areas that are protected from weather.

i. Seeding:

1. Seed shall be clean and fresh and delivered to the site in the original, unopened bags showing the net weight, composition of mix, suppliers name and guarantee of analysis. Seed shall be delivered and stored in original unopened packages, kept dry, and not opened until needed for use. Damaged or faulty packages shall not be used and will be rejected. Seed shall have been harvested for planting in the current growing season, and shall have been packed within the last 9 months.

2. All seed shall be interagency certified under the auspices of a State Seed Improvement Cooperative and shall bear theirs seals of certification on each 50 pound bag. Permanent seed shall be 75% pure live seed minimum.

3. Seed materials will be inspected by the Engineer upon arrival at the job site and prior to planting. Any materials not in compliance with specifications will not be accepted and shall be removed from the job site immediately.

4. All seed materials shall be protected from drying out and from wind damage during delivery.

5. Furnish seed in sealed, standard containers with germination and purity percentages clearly labeled.

j. Plant Material: Provide healthy, vigorous growing specimens exhibiting uniform growth and form characteristic of their species that satisfy the project specifications. Plants shall be free of chlorosis, yellowing, blemished or damaged parts.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

k. Label all flats of plants and all separate plants with a securely attached waterproof tag, bearing legible designation of botanical and common name, written with waterproof ink.

2. Storage of Materials

a. Store and cover materials to prevent deterioration. Remove packaged materials which have become wet or show deterioration or water marks from the site and replace at no additional cost to the City.

b. Seed that is wet or moldy or that has been otherwise damaged in transit or storage shall be replaced at no additional cost to the City.

F. Job Conditions

Terrestrial and Wetland Buffer Zone Plantings: Unless otherwise directed by the Engineer, evergreen material shall be planted and transplanted from April 1st to May 15th and from September 1st to October 15th. Deciduous material shall be planted and transplanted from March 1st to May 30th and from October 15th to December 1st. Container-grown herbaceous material shall be planted and transplanted from March 1st to May 30th and from August 15th to September 15th (SEE PLANTING SCHEDULE). Perform actual planting when conditions are suitable. No plant material shall be planted when the ground is frozen or in excessively moist condition. All material labeled as fall planting hazard shall be installed during the spring only. Notify the Engineer before proceeding with any planting operations.
Wetland Plantings:

1. Time of Planting and Transplanting. All wetland plantings shall be installed in time frames indicated under the above Terrestrial and Wetland Buffer Zone Planting section. Perform actual planting when conditions are suitable. No plant material shall be planted when the ground is frozen or in excessively moist condition. Notify the Engineer before proceeding with any planting operations.

2. The Contractor shall proceed with and complete landscape work as rapidly as portions of site become available, working within seasonal limitations for each kind of landscape work required.

3. Utilities. The Contractor shall determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until removal is approved by the Engineer.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

4. Excavation. When conditions detrimental to plant growth are encountered, such as rubble fill, adverse draining conditions, or obstructions, notify the Engineer.

5. Preservation and Restoration of Existing Trees and Shrubs.

   a. In order to avoid surface and subsurface root damage and soil compaction, the Contractor shall not be permitted to stockpile materials of any nature under the drip line of existing trees and shrubs. This directive shall apply to all areas within or outside the Contract limit line.

   b. The Contractor shall assume the responsibility for any remedial work such as root and top pruning required and/or necessary to prevent loss of plant material when this article is violated or when trees or shrubs are injured by construction equipment.

   c. Compensatory pruning and fertilizing of existing trees and shrubs shall be performed to compensate for damage of roots incurred. Fertilize in areas around undamaged roots only and not adjacent to the trunk or main stem. Fertilizer shall be applied in the fall unless otherwise approved by Engineer.

   d. Tree pruning shall be performed in accordance with NYCDOT Standard Highway Specification Section 4.18.

   e. No separate payment will be made for fertilizing and pruning of trees and shrubs in stockpile areas or when trees or shrubs are injured by construction equipment, but the cost thereof will be deemed to be included in the various prices bid for the items for which such pruning and fertilizing are necessary.

   f. No existing trees, shrubs or herbaceous plants shall be removed, except as specifically required by this Contract or as specified on Contract Documents, or as specifically approved in writing by the Engineer.

   g. Any areas or items of existing landscape which are removed or damaged shall be replaced by the Contractor at no additional cost to the City. The Contractor shall match the existing condition prior to damage or as directed by the Engineer.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

h. All existing landscape features including trees, shrubs, perennial, meadows, lawns, wetlands, paving, walls, stairs, etc. shall be protected by the Contractor, utilizing methods approved by the Engineer prior to start of work.

G. Guarantee

1. Landscape Guarantee and Replacements

a. Guarantee. All landscaping work shall have a replacement guarantee for a period of three (3) years beginning at the date of acceptance of the Landscaping work or the date of substantial completion, whichever is later, and shall be considered as included under monies shown within the guarantee provisions of Schedule A.

b. Operations. The Contractor shall, for a period of three (3) years, cultivate, weed, mulch, prune, and water all trees, shrubs, herbaceous plants, vines permanent seeded areas under this Contract, to the satisfaction of the Engineer. The Contractor shall replace, according to the original specifications, any plant material which is dead or in a dying condition at the request of the Engineer. The Engineer shall be the sole judge as to the condition of the plants. The guarantee and maintenance applies to all planted and grassed areas, meadows, paved and other landscaped areas.

c. Replacement. Any plant material that is dead or not showing satisfactory growth, as determined by the Engineer, shall be promptly removed and replaced by the Contractor during normal planting season specified in Section 7.401.2E. Initial replacement of dead material and the repair of bare areas will take place one year following the acceptance of plant material. The replacement shall be of the same variety, size and character as specified for the original planting. Unless a written waiver of this clause is issued, under the terms of the guarantee, replacement plants shall be chosen only by the Engineer.

At the end of the guarantee period, and upon written request, an inspection will be made by the Engineer. If mortality exceeds ten percent or if bare areas occur, the Contractor shall replace plant material.

H. Materials

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

1. Topsoil

   a. Topsoil from site stripping shall be used if the material meets NYCDOT Standard Highway Specifications Section 2.26. A soil test(s) shall be made at Contractor's expense to determine if the specifications for all the tests listed have been met.

   b. Additional topsoil shall be furnished from sources off the Contract site when existing topsoil is not sufficient. Material shall consist of natural loam topsoil, free from subsoil, obtained from an area which has never been stripped. Topsoil shall comply with the requirements of NYCDOT Standard Highway Specifications Section 2.26.

2. Fertilizer

   Fertilizer shall be provided as indicated on the Contract Drawings: Osmocote, granular, slow-release in the specified time frame releases and analyses. Fertilizer shall be furnished in standard containers, with name, weight and guarantee analysis of contents clearly marked thereon. Appropriate containers to disperse specified amounts of fertilizer into planting holes shall be supplied and used by the Contractor.

3. Mycorrhizal Inoculants

   a. Mycorrhizal inoculants shall be used in all tree and shrub planting operations in all areas receiving topsoil from off-site sources, or stripped topsoil stockpiled in excess of one year.

   b. The inoculants for trees and shrubs shall be "Mycor Tree Saver" as manufactured by Plant Health Care, Inc., or approved equal. The inoculants shall contain fresh, live and viable spores of both endo (VAM) and ecto (Pt) mycorrhizal fungi. All inoculants shall be delivered in sealed containers or packages of the Vendor, listing the weight, content, date of packaging and name of Vendor.

   c. The inoculants for herbaceous plants and grasses shall be Mycor Plant Saver as manufactured by Plant Health Care, Inc., or approved equal. The inoculants shall contain fresh, live and viable spores of both endo (VAM) and ecto (Pt) mycorrhizal fungi. All inoculants shall be delivered in the

Vendor's sealed containers or packages, and shall list the weight, content, date of packaging and name of the Vendor.

d. The inoculants shall be stored in unopened containers in a cool, dry location. All containers must be inspected by the Engineer prior to opening. Any inoculants dated eighteen (18) months or more prior to the date of intended use shall not be used. Any inoculant that has been in a wet condition shall not be used. Any inoculant rejected by the Engineer shall be removed from the site.

e. For trees and shrubs, the Contractor shall incorporate the inoculant into the top eight inches (8") of the topsoil mix used in the planting operations described in NYCDOT Specifications, and as per the manufacturer's instructions. The amount of inoculant used at each plant shall be based on the plant's size - see manufacturer's instructions. For herbaceous plants, the Contractor shall place the inoculant into each planting hole as per manufacturer′ s application rate and project plans.

f. The Contractor shall not apply fungicide to any areas receiving inoculant for a minimum of two weeks following the planting operations.

4. Plant Material

a. The Contractor shall furnish all plant material shown. Plant material must be true to name and size and conform to the following standards:

i. American Joint Committee on Horticultural Nomenclature, Standardized Plant Names (Published by Mount Pleasant Press J. Horace McFarland Company, Harrisburg, PA.).

ii. American Association of Nurseryman, "Horticultural Standards" (Published by American Association of Nurserymen, Inc., 635-636 Southern Building, Washington, D.C.).

b. Nursery grown plants shall mean plants propagated by seed, division, tissue culture or cloned from existing stock at a nursery, which are healthy, vigorous plants, cultivated in accordance with sound horticultural practice. All plants shall be nursery grown unless collected from natural areas owned

or leased for that purpose by the nursery. All plants shall have been grown under the same climatic conditions as those of the planting site. All herbaceous plants shall come from seeds or stock collected within a one-hundred mile radius of the project site. Only those nurseries within a 250-mile radius of the planting site will be accepted as plant sources. In some cases plant material may be obtained outside the 250-mile radius on a case-by-case basis.

c. All plants and all balled and burlapped plants shall be freshly dug; neither heeled-in nor plants from cold storage will be accepted. All plants shall have been transplanted or root pruned at least once in the past three years.

d. All plants shall conform to the measurements specified in the plant list on the Contract Drawings. All plants shall be typical of their species and shall have a normal, healthy habit of growth and be of first quality, sound, vigorous, well-branched and densely foliated. Plants that meet the requirements specified in the plant list, but that do not possess a normal balance between height and spread will not be accepted. No damaged or diseased plants will be accepted.

e. Plug Stock Plants: Provide plug stock plants grown in an approved nursery in accordance with good horticultural practice, with healthy root systems developed by transplanting or root pruning. Plug stock shall be grown in 2-inch cavity trays. Tidal plug stock plants shall be acclimated in the nursery to salinity levels between 15 and 25 ppt for a period of not less than two (2) weeks prior to installation. Plugs shall be propagated and grown in cells and not as bare root stock or as bedded plants. The extracted root system shall conform to the shape and dimensions of the growing cells without sloughing soil or growth media as determined by on-site inspection. Materials not conforming to the dimensions of the cell may be rejected without compensation to the Contractor. The extracted root system of the plugs shall have the majority of the roots in the vertical orientation. Roots shall be white in coloration and firm to the touch. Roots shall not have a strong sulfide odor (rotten egg smell) or be black in color. If the horizontal roots are thick and flattened and the roots stays in a thick net shape of the original cell when the media is shaken loose, the plant may be determined to be "pot bound " and shall be rejected

without compensation to the Contractor. Species shall be as shown on the Contract Drawings.

5. Mulch

Mulch shall be organic mulch free from deleterious materials and suitable for top dressing of trees, shrubs or plants and shall be shredded hardwood bark, decayed hardwood chips, leaf mold, pine straw, partially decayed leaves, cottonseed hulls, peanut hulls or other organic products. Mulch must be aged at least one year, should not contain elm wood chips, or be from diseased trees. No shredded bark pieces shall be greater than 3" in length and 3" in width. Mulch for seeded areas shall be clean, seed-free salt hay. Mulch shall be free of roots or other parts of invasive exotic plants that may take root in restored area.

6. Compost

Compost having the general properties of humus shall contain organic matter with no admixture of refuse or material toxic to plant growth and shall be completely decomposed and free from deleterious materials such as a glass, paper, plastics, metals, etc.

7. Materials for Anchoring, Staking, Guying, Wrapping

a. Stakes. The Contractor shall provide straight, sound cedar stakes, 2 x 2-1/2 inch diameter (50 x 50 mm or 63 mm diameter) in size.

In natural areas, where wind-disturbance is unlikely Engineer will determine if stakes are necessary. If it is determined that staking is required, a modified staking system shall be used. The modified stakes shall be shorter than conventional stakes, and shall protrude 18 inches above the finished grade. Stakes shall be anchored and fastened in the same manner as in conventional staking.

b. Tree guys. The Contractor shall provide guys of 3/4" woven polypropylene fabric, such as "Arbor-Tie" or approved equal. Each end shall be coiled tightly, with enough slack left in guy so as to allow slight movement of tree trunk. Guying shall be performed under the direct supervision of the Engineer.

c. Wrapping Material. The Contractor shall use standard nursery tree wrapping paper, or burlap manufactured for

wrapping tree trunks. Burlap shall be made of jute. Twine for tying shall be lightly tarred sisal (lath) yarn.

8. Topsoil Mix

The topsoil mix shall meet the requirements listed in the NYCDOT Specifications Section 2.26.

9. Temporary Seed Mixtures

Soil stockpiles and cleared and graded areas shall receive oat seed (avena sativa) for temporary stabilization as required during the spring and summer months. Areas requiring temporary stabilization after August shall be seeded with certified "Aroostook" winter rye.

10. Permanent Seed Mixture

Seed mixture shall be as specified on the Contract Drawings unless otherwise directed by the Engineer.

Nurse/Cover seed for the permanent seed mixture shall consist of oats (Avena sativa) during spring seeding season and certified "Aroostook" winter rye (cereal rye) during fall seeding season. Nurse/cover seed shall be added to the permanent seed mix at a rate of 15 lbs per acre or 0.35 lbs per 1,000 sq. ft.

I. Execution

Installation/Application/Performance for Terrestrial and Wetland Buffer Zone Plants

1. Workmanship. The Contractor shall complete all work in the best manner, so that the work as a whole is of uniform quality and appearance. The Contractor shall conform to the requirements specified hereafter.

2. Preparation.

   a. Areas described and shown on plans shall be rough graded with suitable local fill to (maximum) four (4) inches below the finished surface, topsoiled, fine graded, prepared for planting and landscaped.

   b. Subgrade shall be kept free of masonry, concrete, metal waste materials, and debris.

c. Remove stones over 1-1/2 inches in any dimension, as well as sticks, rubbish and other extraneous matter.

d. No topsoil mix is to be placed until the subgrade is approved by the Engineer.

e. For planting beds, spread topsoil mix to minimum depth required to meet lines, grades and elevations shown on the Contract Drawings, after light rolling and natural settlement.

f. The planting beds and pits shall be worked up well, and shall be free of other vegetation and large clods of soil.

g. Apply fertilizer at rate specified in Contract Drawings during planting and seeding operations. Do not use fertilizer for wetland plants or in excessively wet areas.

3. Delivery: Plants shall be packed, transported, and handled with utmost care to insure adequate protection against injury. When transported in closed vehicles, plants shall receive adequate ventilation to prevent sweating. When transported in open vehicles, plants shall be protected by tarpaulins or other suitable cover material. All bare root plants shall be adequately protected from drying out and immediately after inspection shall be heeled in moist soil. Balled and burlapped plants shall be set on the ground and the ball covered with soil. Until planted, all material shall be properly maintained and kept adequately moist, to the satisfaction of the Engineer.

4. Inspection: Inspection may be made before digging if the Engineer directs, but no plant material shall be planted by the Contractor until inspected by the Engineer at the site of the work. Plant material will be rejected if delivered with broken or damaged root balls, or if damaged on site by rough handling. All rejected material shall be immediately removed from the site and replaced with acceptable material at no additional cost to the City. Final inspection shall be made upon completion of the Contract.

5. Installation.

a. Planting Operations.

1. Layout: All trees, shrubs and herbaceous shall be laid out in random and naturalistic arrangements, as specified in the Contract Drawings unless otherwise directed by the Engineer. All plant and planting area

locations shall be staked prior to planting by the Engineer. Place no plantings within two (2) feet of pavements or structures, unless otherwise indicated.

2. Loosen subsoil/subgrade to a depth of six (6) inches prior to topsoil placement so that the topsoil and subsoil layers don't mix. Loosen subsoil with rototiller, backhoe or discer. The soil-loosening operation shall be conducted in such a way as to back its way out of the site. After this, no more heavy machinery shall be allowed on the planting beds.

3. Rototill/cultivate soils to a depth equal to the depth of the root ball and two times the diameter of the root ball. Set the tree/shrub on the undisturbed solid ground in the center of the area.

4. Obstructions below Ground: Remove any rock, rubble, masonry, concrete, metal, stones over one inch or other underground obstructions to the depth necessary to permit proper planting.

5. Disposal: Remove and dispose of all excess excavations and unsuitable materials. Dispose in accordance with all local laws and regulations at Contractor's cost.

6. Apply topsoil, utilizing small equipment that does not compact soil.

7. Plant Beds: All plant material shall be planted in existing on-site and/or locally available topsoil, except for shallow plantings installed within the specified four-inch (minimum) topsoil layer.

8. Bare root material shall be adequately protected from drying out and immediately heeled in after inspection. The bundles of heeled-in plants shall be set upright on the ground, covered with mulch, and kept adequately moist until the time of installation. Until the time of planting, all plant material shall be stored in an approved location, securely fenced and maintained, to the satisfaction of the Engineer, at no additional cost to the City. All plants not planted immediately shall be watered as necessary to maintain optimal health until planting.

9. Setting Plants: Plant all plants to the same depth as their place of growth, unless otherwise directed. Center the plants in their planting pits. Set in the natural upright position at such a level that, after settlement, a normal or natural relationship of the crown of the plant with the ground surface shall be established. Be careful not to exert any pressure that will damage any portion of the plant.

10. Topsoil mix shall be lightly tamped around the base of all plants and trees. Avoid compacting the soil. As clay soils are particularly prone to compaction, especially if worked when wet, transplant into clay soils when they are not saturated to the greatest extent possible. Do not leave plants exposed to sun or wind prior to planting. Take special care to avoid desiccation of fibrous-rooted plants.

11. The Contractor shall be liable for any damage to property caused by planting operations and the Contractor shall, without any additional cost, restore to original condition or replace all trees, plant beds, lawns, meadows and all construction disturbed or damaged in performing the work of this Contract.

b. Planting Trees and Shrubs.

1. Trees and shrubs shall be planted before herbaceous plants to avoid trampling of the smaller material. The Contractor shall properly sequence plant delivery to achieve this progression.

2. Balled and burlapped. The roots of balled and burlapped plants shall, if not immediately planted after digging and inspection, be adequately protected by topsoil until planted in their final location. Handle balled plants so that the ball will not be loosened. After the soil has been thoroughly firmed under and around the ball, cut the burlap away from the upper half of the ball and adjust remaining burlap to prevent the formation of air pockets; when directed by the Engineer remove the burlap entirely. Firm the soil at 6" to 8" intervals and thoroughly settle with water. Remove all wire baskets from root balls, unless otherwise directed by the Engineer. Install

mulch around trees and shrubs immediately after installation.

3. Container. Cut containers on 2 sides with an approved can cutter and remove plant from container. Set container grown stock as specified. If container grown plant is root-bound or can be easily pulled from container, plant shall be rejected. Place plant on a cushion of planting soil mixture and carefully work soil mix around roots by hand and puddle with water until the soil mix layers are completely saturated.

4. Tube stock. Plants shall be removed from tube entirely and without damage. Plugs shall have solid soil/root masses with the soil in place. Roots must appear clean and white in coloration. If plug is root-bound or can be easily pulled from tube, plant shall be rejected. Plug shall be installed in hole perpendicular with root collar and even with the surrounding grades. Plant to be firmed in to remove air pockets, then watered to full saturation.

5. Mix granular 12-14 month slow release Osmocote into the top two inches (2") of soil backfill at the rates indicated on the Contract Drawings. Apply Mycorrhizal inoculants directly to the root ball. The top of the root ball/container soil shall be level with the substrate surface. Excess substrate shall be distributed around the planting sites. No saucers shall be constructed around the planting sites with the excess substrate.

6. Mulch pits, trenches and all planted areas. Provide not less than a three (3) inch thick layer of mulch and work into top of soil and finish level with adjacent finish grades. Do <u>not</u> place mulch within six (6) to eight (8) inches of tree trunks, nor should the base of shrubs and other plants be covered by mulch. No separate payment shall be made for mulching planted areas.

7. Prune, thin out and shape trees in accordance with standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise directed by the Engineer, do not cut tree leaders, and

remove only injured or dead branches from flowering trees, if any. Prune plant material to retain natural character.

8. Trees shall be placed with the tags facing north. Placing the trees in the same orientation to the North as they were grown in the nursery shall serve to limit bark sun scald.

9. Guy and stake street trees immediately after planting, as required by the Engineer. Trees planted as part of a natural area restoration must use modified staking system if deemed necessary. Stakes shall be removed after one complete growing season.

10. Stake all trees within 20 feet of a surface water feature, so that they will not be washed away in time of flood.

6. Method of Work. Submit a list of proposed methods of execution of work under this section for review by the Engineer when proposed methods are different from, or supplementary to, those specified herein.

J. Temporary Seed Mixture

1. Soil stockpiles shall be seeded with a temporary seed mixture if they will be in place for greater than 30 days. Cleared and graded areas shall also be seeded with a temporary seed mixture to temporarily stabilize them, if they will not be landscaped or planted (final) for more than 30 days. A temporary seed mixture shall be used to stabilize stockpiles and portions of the site where construction activities have temporarily or permanently no more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased. This requirement does not apply if earth-disturbing activities will be resumed within fourteen (14) days.

2. Seed mixture – Temporary seeding shall be oat seed (Avena sativa) at a rate of 30 lbs per acre or 0.7 lbs per 1,000 sq. ft. If area is seeded during months of September through November, certified "Aroostook" winter rye (cereal rye) shall be used at a rate of 50 lbs per acre or 1.25 lbs per 1,000 sq. ft.

3. If temporary seeding is not made within 24 hours of construction/disturbance, the soil must be scarified prior to seeding.

4. Method of seeding – seed shall be evenly applied with broadcast seeder, drill or cultipack seeder.

5. If temporary seeding is made under favorable soil and site conditions during the optimum seeding dates (April 1 – June 1 or September 1 – October 15) mulch is not required. Any temporary seeding outside of those dates shall be hydroseeded with a mulch binder. Binder shall be a cellulose or non-asphaltic emulsion, natural gum binder blended with gelling or hardening agents. A wood fiber mulch shall also be added to the binder for improved stability. Terra-tack, as manufactured by Reinco, Inc., Hydrobond by JRM Chemical, Inc, Dustout by DustoutUS, or equivalent as approved by the engineer, shall be used. Alternatively, the temporarily seeded area can be mulched with a straw of oat or wheat stalks (not hay) applied at a rate of 2 tons per acre (100 - 200 bales / acre) uniformly distributed over the sown seeds and held in place through the use of a straw crimper

6. Any area with fail to establish vegetative cover adequate to prevent rill erosion will be reseeded as soon as such areas are identified.

K. Permanent Seed Mixture

1. Seed materials shall be inspected by the Engineer upon arrival at the job site and prior to planting. Any materials not in compliance with specifications shall not be accepted and shall be removed from the job site immediately.

2. All seed materials shall be protected from drying out and from wind damage during delivery.

3. All areas shown to receive seed on Contract Drawings and all areas which are disturbed and not planted shall be seeded.

4. Seedbed Preparation – Scarify all compacted areas and remove all debris and obstacles such as rocks and stumps.

5. Do not broadcast seed by mechanical application when the wind velocity is such as to prevent uniform seed distribution.

6. Apply seed at the rate(s) specified on the Contract Drawings.

7. Time of Seeding – Permanent seeding shall be done within 15 days of final construction activities. Optimum seeding times are in the spring from April 1 – June 1 and in fall from September 1 – October 15. If construction is completed during mid-summer, seeding may

be done if watering will be provided.

8. Method of Seeding – Seed shall be broadcast by hand or mechanically using a drop-hopper. Seeds shall be blended thoroughly with a sand filler and uniformly broadcast over the entire area then gently hand raked 1/8 to ¼ inch into the soil.

9. Following the seeding operation, 10-10-10 fast release fertilizer shall be broadcast at a rate of 400 lbs/acre throughout the seeded area by hand or mechanically using a cyclone broadcaster. Seed shall be watered as recommended by the seed manufacturer to achieve specified growth coverage.

10. Seeded areas shall be covered with ECS-1B single net straw biodegradable rolled erosion control product furnished by East Coast Erosion Blankets, 443 Bricker Road, Berryville, PA 19056, (800) 582-4005 or approved equal. Alternatively mulching straw of oat or wheat stalks (not hay) shall be applied at a rate of 2 tons per acre (100 - 200 bales / acre) uniformly distributed over the sown seeds and held in place through the use of a straw crimper.

11. Seeding shall be deemed acceptable when 85% coverage of the seeded area with the seeded species has been achieved. Any area not meeting this requirement shall be reseeded with the original seed mix.

12. Areas seeded with temporary cover grass shall be rototilled and/or harrowed prior to seeding with permanent seed mix during the allowed time period.

L. Final Acceptance

Trees, shrubs and herbaceous plants must be thriving. Planting beds must be evenly mulched and free of invasive nonnative plant species. Paving/landscape interface must be a smooth, crafted transition free from defects such as gaps, sharp edges or sudden level changes.

M. Final Cleanup

At time of final inspection of work, and before final acceptance, clean any paved areas that are dirty or stained due to work of this Section by sweeping or washing, and remove any defacements or stains. Remove construction equipment, excess materials and tools. Remove from site any debris and dispose of off-site, in accordance with all local laws, and at the Contractor's expense. The Contractor shall also cut all perimeter grass and weeds before final acceptance.

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

N. Wetland Plantings:

1. Installation

The Contractor shall complete all work in the best manner, so that the work as a whole is of uniform quality and appearance. The Contractor shall conform to the requirements specified hereafter. Plant material scheduled for planting in coconut fiber logs shall also be rooted and potted in coconut fibers, and not in potting soil. This requirement shall serve to safeguard against plants floating out of coconut fiber logs due to the washing away of potting soil.

a. At the elevations described and shown on the plans, the areas shall be fine graded, prepared for planting and landscaped.

b. Subgrade shall be kept free of waste material and debris. Subgrade shall be compacted prior to topsoil application at the Engineer's direction.

c. Remove stones over 1-1/2 inches in any dimension, as well as sticks, rubbish and other extraneous matter.

d. The planting areas shall be worked up well, and shall be free of other vegetation and large clods of soil.

e. Install erosion control mat.

f. Apply fertilizer at rate specified in Contract Drawings during planting and seeding operations.

2. *Spartina alterniflora* shall be planted at 1.5 foot on center spacing.

a. An auger shall be used to develop planting hole with bit slightly larger than plug stock.

b. The depth of auger placement shall allow for easy plant placement to match the base of plant with the surrounding grade while limiting formation of air pockets beneath planting hole.

c. Prior to placement of plant plug, add one (1) ounce of fertilizer to bottom of planting hole.

d. Insert plant in hole with root system oriented downward. While the plant is in this position, the soil profile shall be fully and firmly closed with an appropriate hand tool.

e. Once the soil is closed, firm foot pressure shall be applied in several positions immediately adjacent to the plantings to ensure good soil and plant contact, and to remove any air pockets and voids.

f. If a soil depression is formed above or immediately adjacent to the planting location, enough soil shall be sloughed from the surrounding area and firmly tamped, but not compacted, into the depression to leave the planting area at the same elevation as the surrounding soil or slightly higher.

3. Erosion Control Blankets

a. Center a blanket in the bottom of the wetland area and anchor the erosion control blankets in a minimum 8" x 8" slot using five evenly spaced staples. Unroll blankets carefully in the direction of water flow, being careful to place blankets loosely and in full contact with the soil.

b. Overlap blanket edges approximately 4" with downstream edges over upstream edges.

c. Staple blankets using approximately 3 staples per square yard.

d. Overlap blanket ends 6" in a minimum 8" x 8" check slot, upper blanket over lower blanket and staple using five evenly spaced staples.

e. Cut excess blanket with scissors and anchor at the entrance to the weir/micro pool in a minimum 8" x 8" check slot with five evenly spaced staples.

f. Blanket shall not float or 'bubble' anywhere after wetland is inundated with water.

3. Planting Operations

a. Layout: All plants shall be laid out in random and naturalistic arrangements, as specified in the Contract Drawings unless otherwise directed by the Engineer. All plant and planting

area locations shall be staked prior to planting by the Engineer. Place no plantings within two (2) feet of pavements or structures, unless otherwise indicated.

b. When planting containerized wetland plants, care shall be taken so as not to set the plants in water where there is in excess of 3" - 4" of water between the top of plant and the water surface. When planting dormant wetland plants, care shall be taken so as not to set the plants in water where there is in excess of 12" - 14" of water between the top of plant and the water surface.

c. When planting containerized or tube wetland plants, care shall be taken so to set the plants in the water regime noted on the Contract Drawings plant schedule.

d. Rototill/cultivate soils to a depth equal to the depth of the root ball and two times the diameter of the root ball. Set the tree/shrub on the solid ground in the center of the area.

e. Obstructions below Ground: remove any rock, rubble, masonry, concrete, metal, stones over one inch in diameter or other underground obstructions to the depth necessary to permit proper planting.

f. Disposal: Remove and dispose of all excess excavations and unsuitable materials. Dispose in accordance with all local laws and regulations at Contractor's cost.

g. Plug stock plants shall be removed from tube entirely and without damage. Plugs shall have solid soil/root masses with the soil in place. Roots must appear clean and white in coloration. If plug is root-bound or can be easily pulled from tube, plant shall be rejected. Plug shall be installed in hole perpendicular with root collar and even with the surrounding grades. Plant to be firmed in to remove air pockets, then watered to full saturation.

h. The storm sewers tributary to outfalls should not be put into service for 6 to 8 weeks after completion of the associated wetland plantings. This will permit the wetland plantings to establish themselves.

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

O. Measurement and Payment

The quantity to be measured for payment under this section shall be the total amount of trees, shrubs, herbaceous plants and seeded areas furnished, planted and maintained.

The contract price per unit for Landscaping Work shall be as indicated on the BID SCHEDULE OF PRICES Item No. BMP-7.401-I through BMP-7.401-J inclusive. The price bid shall be a separate unit price per tree, shrub and herbaceous plant specified within the Contract Drawings, and shall include the costs of all excavating and preparing planting pits and beds, adding soil amendments, furnishing plants, digging, inspecting, planting, pruning, staking, guying, anchoring, wrapping, mulching, fertilizing, furnishing seed, seeding, liming, disking, raking, tilling harrowing, mowing, material, and maintaining all plant material and seeded areas. The price bid shall also include the costs of all rough and fine grading, all specified soils necessary and required for the satisfactory completion of all landscaping work and all other work incidental thereto in accordance with the plans and specifications to the satisfaction of the Engineer.

The contract price per square foot of seeding shall be as indicated on the BID SCHEDULE OF PRICES Item No. BMP-7.401-I.

PLANT MATERIAL SUMMARY FOR LANDSCAPING WORK

Item	Description
BMP-7.401-I inclusive	Seeding
BMP-7401-J	Herbaceous Plants – Plugs

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.402 SOD

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.403 TOPSOIL FOR RESTORED AREA

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.404-A RESTORATION SPECIALIST (CONSTRUCTION MONITOR)

A. Description of Work

The Contractor is advised that the portions of work within this Contract pertaining to the construction of the culvert construction and wetland restoration and all other work in the project area shall require the supervisory expertise of a Restoration Specialist. The Restoration Specialist shall supervise all restoration work performed by the Contractor and his/her Subcontractors for the duration of the project, in accordance with the plans, specifications and directions of the Engineer. The Restoration Specialist shall also be responsible for overseeing the implementation of the project's soil erosion control plan. In addition, the Restoration Specialist shall be cognizant of all conditions of the NYSDEC tidal wetlands permit for the project, as they relate to work in the wetlands. Furthermore, the Restoration Specialist shall be responsible for overseeing all installation of plant material. The Restoration Specialist shall be responsible for preparing a restoration plan for any property disturbed by sanitary or storm sewer construction. The Restoration Specialist shall report to the NYCDDC, as represented on-site by the Engineer. The qualifications of the Restoration Specialist shall be approved by the NYCDDC and on-site prior to the start of any work.

B. Qualifications

The Restoration Specialist utilized to perform the work required must have performed at least three (3) projects similar in scope and type to the required work in the previous five (5) years. The Restoration Specialist shall be a Registered Landscape Architect or have equivalent professional experience. Prior to the start of work, the Contractor shall be required to submit the names and resumes of at least three prospective candidates to the NYCDDC. The NYCDDC shall approve the qualifications of the prospective candidates or alternatively ask for more choices, if the NYCDDC deems the candidates to be not qualified.

C. Site Monitoring

The Restoration Specialist shall monitor the Contractor's in-place erosion and sediment control devices, including, but not limited to, construction (limiting) fences, silt fences, etc., and shall notify the Contractor when maintenance or repair of these devices is necessary. The Restoration Specialist shall monitor related/adjacent construction to insure that these activities do not adversely impact restoration activities or the success of the restoration work.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

D. Restoration Supervision

The Restoration Specialist shall supervise all aspects of the work including Wildlife Control and removal, in-stream sediment removal work, plant and sod salvage, and perimeter restoration work. The Restoration Specialist shall oversee all landscaping activities including installation of plant material related to the work area.

E. Design and Design Review

The Restoration Specialist shall prepare, design and review design work as needed during construction. This work shall include but not be limited to the following:

a. research and prepare design revision/modification drawings,

b. research and prepare revisions/modifications to detailed specifications,

c. prepare supplemental field sketches,

d. review and critique design modification drawings and supplemental drawings.

The Restoration Specialist shall undertake this work when directed by the NYCDDC as represented on-site by the Engineer.

F. Photo Documentation

The Restoration Specialist shall keep a digital photograph log of the project. The photo log will follow the progress of the project, in a clear and understandable progression, and shall incorporate before, in progress and completed photographs of the work area and natural area restorations within the project. Fixed photopoints shall be used at each site to ensure that before and after photographs are taken from the same location and angle. The photo log will be utilized by NYCDDC for required reports, etc.

The Restoration Specialist shall use a digital camera with a minimum resolution of 4.1 megapixels for use during all phases of the project for photo-documentation purposes. The Restoration Specialist shall assemble the completed photo log onto CD's and transmit the complete photo log to the Engineer.

G. Monitoring Reports

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

The Restoration Specialist shall prepare and submit a Monitoring Report to the NYCDDC representative, its agent, or the Engineer following the completion of all planting and associated restoration activities. The Restoration Specialist shall continue to submit an annual Monitoring Report until the guarantee period(s) for the plant material has expired. Six (6) copies of each report submittal shall be required.

The Restoration Specialist shall examine, monitor and report on the various components of the restoration and shall incorporate color photographs, color photocopies, graphs, etc., as appropriate. All information shall be reported in a concise format. The Monitoring Report shall:

- report on all construction activities related to restoration and stabilization,
- report the conditions of the vegetation planted within this Contract,
- quantify survival and cover rates and compare to permit requirements,
- recommend replacement species,
- report observed impacts to existing vegetation,
- report success rates in controlling erosion and sedimentation,
- report voluntary recruitment,
- present recommendations,
- give general commentary for increasing the success of future restoration projects.

H. As-Built Plans and Information

The Contractor shall be responsible for providing to the Restoration Specialist an as-built survey of all areas as an electronic file. The Restoration Specialist shall verify the Contractor's information and include his/her landscape information and any other additional planting or natural features.

I. Measurement and Payment

The quantity to be measured for payment under this section shall be the total number of hours necessary for the supervision of all restoration work within this Contract, site monitoring, design and diagram review, photo

documentation, preparation of monitoring reports and completion of the as-built plans in accordance with the plans, specifications and direction of the Engineer, performed prior to the date of Substantial Completion.

For supplying all labor, materials and equipment necessary for Restoration Specialist, the Contractor shall receive a unit price bid.

The contract price per unit for Restoration Specialist shall be as indicated on the BID SCHEDULE OF PRICES Item No. BMP-7.404-A. The unit price bid shall include the costs for all labor, materials, equipment and incidental expenses necessary or required to complete the work in accordance with the plans and specifications to the satisfaction of the NYCDDC representative, its agent, or Engineer.

No separate or additional payment will be made for work performed in accordance with the requirements of this section during the Maintenance and Guarantee Period specified for the Landscaping work. In addition, said work shall be considered a part of the Maintenance and Guarantee and subject to the provisions thereof should the Contractor fail to complete this work as specified.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.404-B EROSION AND SEDIMENT CONTROL LICENSED/CERTIFIED PROFESSIONAL

A. Description of Work

The Contractor is advised to retain the services of an independent Licensed/Certified professional with practical experience in the principles and practices of erosion and sediment control and Stormwater Management to prepare and certify a site specific Stormwater Pollution Prevention Plan (SWPPP) in compliance with the New York State Department of Environmental Conservation (NYSDEC) Pollutants Discharge Elimination System (SPDES) General Permit for Stormwater water Runoff from Construction Activities, GP-0-15-002, issued pursuant to Article 17, Titles 7, 8, and Article 70 of the Environmental Conservation Law (ECL). The Certified Professional shall be approved by NYCDDC and be present on-site prior to the start of any work.

Within thirty (30) days after the contract is registered, The Contractor shall submit a complete SWPPP and Notice of Intent (NOI) to the New York City Department of Design and Construction (NYCDDC) Infrastructure – Engineering Support Unit for review and comments. The Contractor through his Licensed/Certified Professional shall make all necessary revisions required and resubmit the SWPPP and the NOI for acceptance and signature. Work shall not begin until a permit identification number is issued by the NYSDEC, and an initial inspection is conducted by the Licensed/Certified Professional certifying that the appropriate control measures specified in the SWPPP have been adequately implemented to the satisfaction of the Resident Engineer and the Project Manager of the Engineering Support Unit.

B. Qualifications

The Licensed/Certified Professional employed to perform the required work must have previous experience in work of this nature and in completing the necessary submittals required under this Contract. The Certified Professional shall be a Professional Engineer or a Landscape Architect licensed to practice in New York State, or a Soil and Water Conservation Society Certified Professional in Erosion and Sediment Control (CPESC). Prior to the start of work, the Contractor is required to submit the names and resumes of at least three (3) prospective candidates to the NYCDDC for approval. The NYCDDC shall make a selection or alternatively ask for more choices, if they deem the candidates to be unqualified.

C. Site Monitoring, Inspection and Reports

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

The Certified Professional shall monitor disturbed areas and the Contractor's in-place erosion and sediment control devices, including turbidity curtain, construction limit fence, debris exclusion fence, goose exclusion fence, silt fence, stabilized construction entrance, portable sediment tanks, and site dewatering measures, and shall notify the Contractor when maintenance or repair of these devices is necessary.

Following the start of construction activities, site inspections shall be conducted by the Certified Professional at least once a week and within 24 hours of rainfall events of 0.5 inches or greater. For construction sites where soils disturbance is greater than five (5) acres at one time, the Certified Professional shall conduct at least two (2) site inspections every seven (7) calendar days and within twenty-four (24) hours of the end of each rainfall event of 0.5 inches or greater. The two inspections shall be separated by a minimum of two (2) full calendar days. Subsequent to each inspection, the Certified Professional shall prepare an inspection report and submit the original to the Resident Engineer and one copy to the Infrastructure-Engineering Support Unit. At a minimum, the inspection report shall include, but not limited to, the following information:

1. Date and Time of inspection;
2. Name and Title of person performing the inspection;
3. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;
4. A description of the condition runoff at all points of discharged from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;
5. A description of the condition of all natural surface waterbodies located within or immediately adjacent to the properties boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody;
6. Record of any evidence of soil erosion on the site, potential for pollutants entering the drainage systems, problems at discharge points (such as turbidity in receiving water) and signs of soil and mud transport from the site to the public road at the limits of the project;
7. Identification of all erosion and sediment control practices that need repair or maintenance;
8. Identification of all erosion and sediment practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
9. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the

inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

10. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;
11. Corrective actions that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of post-construction stormwater management practices;
12. Identification and status of all corrective actions that were required by previous inspection;
13. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The Qualified Inspector shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The qualified inspector shall also take digital photographs with date stamp, that clearly show the condition of the practice(s) after the corrective actions has been completed. The qualified inspector shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.
14. Within one business day of the completion of an inspection, the Qualified Inspector shall notify the Contractor and the Resident Engineer of any corrective actions that need to be taken. The Contractor shall begin implementing the corrective actions within one business day of this notification; and
15. All the inspection reports shall be signed by the Licensed Professional.

The Contractor shall retain a signed copy of the General Permit GP-0-15-002, NOI, SWPPP, signed MS4 SWPPP Acceptance form, NOI Acknowledgment Letter and all original inspection reports required by this general permit at the construction site in a prominent place for public viewing from the date of initiation of construction activities to the date of final stabilization and the Notice of Termination (NOT) has been submitted to the NYSDEC. These documents must be made available to the permitting authority upon request. Prior to starting construction, the Contractor shall certify in the site logbook that the SWPPP was prepared in accordance with the requirements of the permit and it meets all federal, state and local erosion and sediment control requirements.

In addition, the Contractor and Subcontractors shall identify at least one Trained Contractor who is an employee of the company that will be responsible for a day to day implementation of the SWPPP. The name and

telephone number of this person should be listed in the SWPPP. The Trained Contractor shall be a Professional Engineer, Registered Landscape Architect, or have received a DEC-endorsed four (4) hours of Erosion and Sediment Control training. After receiving the initial training, the Trained Contractor shall attend a four (4) hour training every three (3) years. The Contractor shall ensure that at least one Trained Contractor is on site on a daily basis when soil disturbance activities are being performed.

Performing implementation of a SWPPP on a permitted construction project without a Trained Contractor on site daily is a violation of Part III.A.6 of the SPDES General Permit GP-0-15-002. Stormwater controls must be maintained in good operating condition until all disturbed soils are permanently stabilized. Control devices in need of repair should be repaired promptly after identification.

Prior to filing of the Notice of Termination (NOT), or at the end of the permit term, the Contractor shall have the Licensed Professional perform a final site inspection. The Licensed Professional shall certify that the site has undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fence, construction limit fence, turbidity curtain, stabilized construction entrance) not needed for long term erosion control have been removed. Subsequently, the Contractor shall submit a complete NOT to the Engineering Support Unit to terminate the permit coverage.

Additionally, the Licensed Professional must identify all permanent Stormwater management structures that have been constructed, and provide the owner(s) of such structures with a manual describing the operation and maintenance practices that will be necessary in order for the structures to function as designed after the site has been stabilized.

The Licensed Professional must also certify that the permanent structures have been constructed as described in the SWPPP.

D. Contractor's Liability.

The Contractor shall be liable for any discharge that either causes or contributes to a violation of water quality standards as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York. Should any storm water runoff from the site violate the water quality standards, the Contractor will be directed to take immediate steps, at his own expense, to rectify the situation and prevent any further sediment from entering the storm sewer system.

In the event that pollutants are discharged to the storm water system due to the Contractor's negligence, the Resident Engineer will direct the

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

Contractor to cease any or all construction activities contributing to the release of these pollutants. The Contractor shall be held responsible, at his own cost, for any and all necessary actions to remedy the damage.

Furthermore, failure of the Contractor and Sub-contractor(s) to strictly adhere to any permit requirements shall constitute a permit violation that could result in substantial criminal, civil, and administrative penalties.

It is the Contractor's responsibility to pay all the SPDES permit fees which shall consist of the yearly regulatory fee, the initial authorization fee per acre of land disturbed and per acre of future impervious area. The Contractor shall be liable for all penalties incurred due to his failure to pay these fees on time.

E. Measurement and Payment

The quantity to be measured for payment under this section shall be the total number of days necessary to prepare the required reports to secure the permits; conduct the inspection and supervision of all erosion and sediment control works within this Contract, site monitoring, photo documentation, and preparation of monitoring reports in accordance with the plans, specifications and direction of the resident engineer, performed prior to the date of substantial completion.

The Contractor shall receive a unit price bid for supplying all labor, materials and equipment required by the Certified Professional.

The contract price per unit for the Licensed/Certified Professional shall be as indicated on the Bid Schedule of Price for Item No. BMP-7.404-B. The unit price bid shall include, but not be limited to, the cost of furnishing all the labor, materials, fees, permits and testing required to prepare the SWPPP, provide and construct all erosion and sediment control devices in accordance with the approved SWPPP; inspect and monitor the work; comply with NYSDEC permitting requirements and all necessary incidentals to complete the work all in accordance with the specifications and the directions of the Engineer.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.405 VECTOR, PEST AND WILDLIFE CONTROL

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.406 WOOD CHIPS

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.407-A EROSION CONTROL MAT

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.407-B EROSION CONTROL MAT – CURLED WOOD OR COCONUT FIBER

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.404-B HERBICIDE APPLICATION

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.405 MYCORRHIZAL INOCULANTS

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.410 PLANT PROTECTION FENCE

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.411 WATERING AND WEEDING DURING GUARANTEE PERIOD

A. Description of Work

1. Planting Period:

The Contractor shall provide all labor, material, tools and equipment necessary to maintain and cultivate the healthy growth of all plantings in the planted area after installation, in accordance with the specifications and contract drawings, during the planting period of the project. For the purposes of this item, the planting period shall begin at the onset of planting, and be continuous until planting is accepted. Plant material will not be accepted unless the plants exhibit healthy growth and satisfactory foliage conditions. For watering and weeding during the planting period, the Contractor shall utilize this item for payment.

2. Guarantee Period:

Upon acceptance by the City and during the guarantee period, the Contractor shall assume the work outlined within this item at no additional payment. No separate payment will be made for watering and weeding during the guarantee period, and such work will be deemed included in the prior bid for plant material.

B. Requirements

The Contractor's responsibilities under this item consists of watering and weeding after installation as required to maintain installed plant material in a healthy and vigorous condition and to provide an acceptable growth medium, in accordance with the specifications and contract drawings.

The Landscape Subcontractor shall submit a watering and weeding plan and maintenance schedule prior to the installation of plant material, to be approved by the Engineer or Restoration Specialist. The plan shall include proposed methods of watering and weeding, including but not limited to tree gators (bags), sprinklers, drip hoses, irrigation, tanker vehicles and hand watering, etc., as well as manual weeding and weeding tools.

The approved plan and schedule do not relieve the Contractor in any way from any aspect of the replacement of dead plant material. The Landscape Subcontractor may alter the maintenance schedule based on weather and field conditions.

C. No Separate Payment

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

No separate payment shall be made for this work of the specification. All costs shall be included in the various Contract Items of this Contract.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.412 SLOPE STABILIZATION

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.413 TEMPORARY GOOSE EXCLUSION FENCE

A. Description

Under this Item, the Contractor shall furnish, install, maintain and remove a temporary Goose Fence as a protective measure against plant herbivory, according to the Plans and Specifications and the direction of the Engineer.

The fence shall be a minimum of five (5) feet high above existing grade and the posts shall be a non-tropical hardwood. The fence shall completely enclose all planted areas so as to prevent geese from entering any newly planted site.

The Contractor shall repair the fence as often as is necessary throughout the guarantee period. The Contractor shall remove the entire fence at the end of the maintenance period, or as directed by the Engineer. Removal of fence is included under this Item, no additional payment will be made for this work.

B. Submittals and Materials

The Contractor must submit the following samples or the manufacturer's catalog cuts for approval ten (10) days before beginning work:

1. Non-tropical hardwood stakes (untreated).

2. Black Bi-oriented Utility Fence (TENAXUS, Memphis Net & Twine Co., Inc., Industrial Netting or approved equal). The fencing shall meet the following specifications:

    a. Material: High density UV stabilized polyethylene plastic resin

    b. Height/length: 48" x 50"

    c. Weight per roll: 20 lbs

    d. Nominal mesh opening: 1"

    e. Tensile strength (range): 2000 - 2310psi

    f. Elongation at Break (%): 660%

    g. 1/4" twine or string

    h. 1" metallic mylar

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

i. 1-1/2" galvanized roofing nails.

j. 2" galvanized staples.

k. 14" Nylon cable ties.

C. Execution

The goose fence shall be installed by skilled laborers with proper tools and equipment for an aquatic environment within 1 day of completing each 50' section of planting. Layout location of stakes according to the Contract Drawings. The Contractor shall drive stakes so that they are level and 1' (min.) from the edge of proposed coir logs or wetland plugs. All broken or splintered stakes shall be removed and replaced with new ones.

Install black bi-oriented utility fencing making sure that there is no space between the existing grade and the bottom of the fence. Fasten safety fence to stake by using 1-1/2" roofing nails. Close all gaps so that adjacent pieces of fence abut tightly together.

Attach twine or string to stakes as shown on the Contract Drawings. String shall be pulled taught to reduce sagging. The string must alternate in and out of fence netting for increased stability of fence. Tie 10" strip of metallic (mylar) flagging along string every four feet. Work in one direction only. The Contractor shall be responsible for removing the fence at the end of the guarantee period for the wetland plants, or at the direction of the Engineer.

D. Measurement and Payment

The quantity to be measured for payment under this Section shall be the total number of linear feet of fence furnished, installed, maintained and accepted in accordance with the Plans and Specifications and the directions of the Engineer.

The contract price per linear foot for Goose Exclusion Fence shall be as indicated on the BID SCHEDULE OF PRICES, Item No. BMP-7.413. The unit price per linear foot shall include all labor, materials, equipment and work incidental expenses necessary or required to complete the work in accordance with the plans and specifications and to the satisfaction of the Engineer.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.414 BMP AS-BUILT PLANS

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.415 VINE AND INVASIVE PLANT REMOVAL

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.415A WILDLIFE STRUCTURES

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.416 GALVINIZED CHICKEN WIRE

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.417 DEBRIS EXCLUSION FENCE

A. Description of Work

The Contractor shall furnish all materials, labor, and equipment necessary to install the debris exclusion fence specified herein and as shown on the Contract Drawings, including all incidental and appurtenant work required for a complete job.

The debris exclusion fence shall protect recently installed plant material from water borne debris and wrack. The Contactor shall maintain the debris exclusion fence shall be maintained in good condition and make repairs as necessary and as directed by the Engineer, by the Contractor during the landscaping and plant guarantee period as directed by the Engineer.

B. Materials and Methods

The debris exclusion fence shall be constructed with the following materials:

A. Furnish saltwater wire netting as follows:

1. 18 gage galvanized wire
2. 1.5 inch mesh opening
3. Galvanized after weaving

B. Posts: Furnish posts of the minimum sizes and weights as follows, 8-foot long, 2-inch square oak posts. Space posts 5 feet on center maximum, unless otherwise shown.

C. For connecting oak posts together Contractor shall use minimum 16 gage high tensile wire. The ties shall be rust resistant.

D. Ties: For attaching netting to oak posts, use 16 inch high tensile polyethylene cable tie strips. For attaching netting to wire grid, use 1/8 inch high tensile polyethylene cable tie strips. All ties shall be ultraviolet light resistant.

E. Line posts shall be spaced 5-feet on center maximum, unless otherwise shown.

The fence shall conform to the detail for Construction limit fence on the Contract drawings.

The debris exclusion fence shall be located where indicated on the Contract Drawings.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

C. Maintenance

The debris exclusion fence shall be inspected periodically (at least once per week), or as directed by the Engineer through the plant guarantee period. Any required repairs shall be made immediately.

D. Measurement and Payment

The quantity to be measured for payment under this Section shall be the total number of linear feet of debris exclusion fence furnished, installed and maintained in accordance with the Plans and Specifications and the directions of the Engineer.

The contract price per linear foot for Debris Exclusion Fence shall be as indicated on the BID SCHEDULE OF PRICES Item No. BMP-7.417. The unit price per linear foot shall include all labor, materials, equipment and work incidental expenses necessary or required to complete the work in accordance with the plans and specifications and to the satisfaction of the Engineer. The cost of removal and disposal of the debris exclusion fence shall be deemed included in the unit price.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.500 SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

Under soil erosion and sedimentation control work, the Contractor shall provide all labor, materials, tools and equipment necessary to complete the execution of the work in complete accordance with the Specifications and all Contract Drawings. All Soil Erosion and Sedimentation Control work shall be done in conformance with and subject to the renewed State Pollutant Discharge Elimination System (SPDES) General Permits for Discharges Stormwater from Construction Activity, GP-0-15-002, the latest edition of the "New York Guidelines for Urban Erosion and Sediment Control" published by the Empire State Chapter of the Soil and Water Conservation Society, and the New York State Department of Transportation Standard Specification Part 107-12 -Soil, Erosion and Air Pollution Statement, including, but not limited to, the following methods of erosion and sedimentation control.

1. Slopes left exposed will, within 30 working days of completion of any phase of grading, be planted or otherwise provided with ground cover device, or structures sufficient to restrain erosion.

2. A ground cover sufficient to restrain erosion must be planted or otherwise provided within 15 working days on that portion of the tract (disturbed area) upon which further active construction is not being undertaken.

The Contractor shall submit for approval by the Engineer, NYCDDC and NYSDEC, a written Erosion and Sedimentation Control Plan, prepared by a Certified Professional in Erosion and Sediment Control (CPESC), who is a Professional Engineer (P.E.) or under the supervision of a P.E. The Erosion and Sediment Control Plan must be signed and sealed by that CPESC and/or the supervising P.E. The Plan shall comply with all conditions of the applicable tidal wetland permit issued by NYSDEC.

The Erosion and Sedimentation Control Plan shall conform to the guidelines as set forth in the latest edition of the "New York Guidelines for Urban Erosion and Sediment Control" published by the Empire State Chapter of the Soil and Water Conservation Society and he/she shall implement the followings:

- No stockpiling of excavated material would be allowed in a manner or location that would permit erosion and its subsequent sedimentation in wetlands or other natural areas.

- No storage of soil shall be permitted within the Contract limits. Soil is deemed to be for this requirement any sediment including material such as topsoil fill, sand, any excavated material, boulders, stones,

cold patch, etc.

- Storm sewers will be installed in a sequence and manner that reduces the time during which the tops of excavated areas would be exposed and vulnerable to erosion.

- At the end of each day's work, the street where sewers are being installed will be cleaned and swept to reduce the amount of soil that could potentially impact downstream areas as sediment. The Contractor shall be required to have a street sweeper on the site.

- Use truck tracking pads at the construction access locations to remove sediment from the tires of the trucks and other construction equipment prior to driving on the adjacent streets.

- Utilize sediment basins, sediment traps and/or sediment filters in the erosion control plan to capture sediment form run-off and from water produced by dewatering operations.

- Use portable sediment tanks to remove sediment from water generated by dewatering operations. All water from dewatering shall be treated before discharge into any surface water bodies, unless the turbidity of the effluent is less than three times the ambient level of the receiving water body as measured by the turbidity meter in standard units (i.e. NTU's).

- The Contractor shall supply all portable equipment.

- Use construction limiting fence, and/or silt fence as shown on Contract Drawings, unless otherwise directed by the Engineer.

- Schedule work in wet areas, such as the mitigation site, during relatively dry summer months.

- Employ water diversions to direct the stream away from the area being worked on, so as to create drier conditions for in-stream work.

- Use temporary pumping sump to control water level at site.

- Prior to the start of construction activities, such as sewer installation, inspect all erosion control measures and continually monitor them, especially after each storm event.

- If the Contractor uses dewatering methods which produce effluent discharges, the Contractor shall monitor each discharge effluent and receiving water body. Discharges shall not cause substantial visible

contrast to the natural condition in any receiving water body. A meter which records turbidity in standard units (i.e. NTUs) shall be utilized to establish ambient conditions in each water prior to discharge. If any monitored turbidity level exceeds three times the ambient level of the receiving water body, the Contractor shall insure (e.g., by reducing the flow rate or otherwise adjusting the dewatering system) that no substantial visible contrast to the natural condition in the receiving water body occurs. The action(s) taken, or the decision not to take any action, shall be recorded in the monitor's log.

The Contractor shall not receive any payment for the preparation of the Erosion and Sedimentation Control Plan. Installation of the Erosion and Sedimentation features and maintenance of them will result in payment for their respective items as described in Section 7.501 through 7.516. The work shall take place at the mitigation site only and is not payment for street work or the installation of sewers; with the exception of the Erosion and Sediment Control Licensed Professional (Section 7.404-B). The Erosion and Sediment Control Licensed Professional shall oversee construction and the installation of the sewers for the entire project.

The work shall include items of work specified under the following sections:

Section Number	Title
7.501	Maintenance of Erosion Control Measures
7.502	Construction Limit Fence
7.504-A	Silt Fence
7.509-A	Stabilized Construction Entrance
7.510	Portable Sediment Tank
7.516	Turbidity Curtain

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.501 MAINTENANCE OF EROSION CONTROL MEASURES

Maintenance/repair of the erosion and sediment control measures shall be performed by the Contractor only as directed by the Engineer.

When, in the judgment of the Engineer, Restoration Specialist, and NYCDDC Construction Monitor, the soil erosion control measures have deteriorated to a point of not functioning adequately because of storm events, the Contractor shall be notified to make the necessary repairs.

If the Engineer deems that the erosion control device was not adequately installed in the first place, repair of such a device shall be the sole responsibility of the Contractor.

Damage to the erosion control measures caused by the construction activity of the Contractor is the responsibility of the Contractor. If the Engineer determines that the damage is the result of the Contractor's construction activity, then the Engineer shall order that the devices are repaired. The Contractor shall make the repairs at his/her own expense.

In the event that the erosion control measures are damaged as a result of vandalism by the general public, the Contractor shall notify his insurance company and put forth his claim for remuneration to the said damage.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.502 CONSTRUCTION LIMIT FENCE

A. Description of Work

The Contractor shall furnish all materials, labor, and equipment necessary to install the construction limit fence specified herein and as shown on the Contract Drawings, including all incidental and appurtenant work required for a complete job. The construction limit fence is used to mark the limit of the construction activity and to protect the adjacent areas.

Upon furnishing and installing the above sedimentation and erosion control device but prior to commencing any other work on-site, the Contractor shall notify the Engineer and arrange for an on-site inspection.

The construction limit fence shall be maintained in good condition and repaired as necessary by the Contractor during the construction and post-construction/site stabilization phases as directed by the Engineer.

B. Materials and Methods

Construction Limit Fence: The construction limit fence shall be high visibility orange construction fence with a minimum height of four (4) feet. The fence shall be constructed of polyethylene fabric fastened to vertical line posts.

Fabric shall be a high density polyethylene grid tightly secured to wood posts. The fabric shall be securely fastened to vertical line posts by means of ties and spaced not more than 12 inches apart on rails and not more than 14 inches apart on line posts.

The construction limit fence shall be located where indicated on the Contract Drawings. The fence shall be adjusted to avoid interference with trees and to maintain access to houses.

Line posts shall be conventional metal "T" or "U" post and shall be spaced not more than 6 feet on centers. Posts shall be securely set in the ground. Line posts shall extend at least 2 feet below finished grade. Post locations shall be adjusted to avoid tree roots as appropriate.

C. Maintenance

The construction limit fences shall be inspected periodically (at least once per week), or as directed by the Engineer. Any required repairs shall be made immediately.

D. Measurement and Payment

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

The quantity to be measured for payment under this Section shall be the total number of linear feet of construction limit fence furnished, installed and maintained in accordance with the Plans and Specifications and the directions of the Engineer.

The contract price per linear foot for Construction Limit Fence shall be as indicated on the BID SCHEDULE OF PRICES, Item No. BMP-7.502. The unit price per linear foot shall include all labor, materials, equipment and work incidental expenses necessary or required to complete the work in accordance with the plans and specifications and to the satisfaction of the Engineer.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.503 STAKED HAY BALES

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.504-A SILT FENCE

A. Description of Work

The Contractor shall furnish all materials, labor, and equipment necessary to construct silt fence specified herein and as shown on the Contract Drawings, including all incidental and appurtenant work required for a complete job.

Upon furnishing and installing the approved silt fence but prior to commencing any other work on-site, the Contractor shall notify the Engineer and arrange for an on-site inspection.

The silt fence shall be maintained in good condition and repaired as necessary by the Contractor during the construction and post-construction/site stabilization phases as directed by the Engineer.

B. Materials and Methods

1. Welded Wire Fence: The welded wire fence shall be a welded wire fence with a minimum height of 20 inches. The fence shall be constructed of wire fabric fastened to the middle rails and to vertical line posts.

   Wire fabric shall be of No. 14 gauge wire with a mesh of approximately 4 inches. The upper edge of the fabric shall be twisted and barbed. The fabric shall be securely fastened to vertical line posts by means of ties and spaced not more than 12 inches apart on rails and not more than 14 inches apart on line posts.

   The silt fence shall be located where indicated on the Contract Drawings. The fence shall be adjusted to avoid interference with trees and to maintain access to houses.

   Line posts shall be spaced not more than 6 feet on centers. Posts shall be securely set in the ground. Line posts shall extend at least 16 inches below finished grade. Post locations shall be adjusted to avoid tree roots as appropriate.

2. Filter Fabric: Filter fabric shall be securely attached to the vertical line posts and wire fabric, and shall be situated between the wire fabric and staked straw bales.

   The filter fabric shall be purchased and delivered in a continuous roll and cut on-site to the length of the barrier(s) to avoid the use of joints. Dimensions of the roll shall be thirty-six (36) inches by one

hundred (100) feet in length. When joints are necessary, filter cloth shall be spliced together only at a line post, with a minimum 6-inch overlap, and securely sealed. The filter fabric shall meet NYSDOT specifications for geotextile, latest edition, and shall be fabric MUTUAL MISF 1776 as manufactured by Mutual Industries Inc., Fabric # GTF190 as manufactured by Linq Industrial Fabric, Fabric # 2130 as manufactured by Propex, or approved equal.

A trench shall be excavated approximately 6 inches wide and 6 inches deep along the line of posts and upslope from the barrier. The filter fabric shall be extending into the trench, the trench backfilled, and the soil compacted over the filter fabric.

Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

C. Maintenance

The silt fences shall be inspected at least once per week and immediately after each rainfall and at least daily during prolonged rainfall, or as directed by the Engineer. Any required repairs shall be made immediately. Should the filter fabric decompose or become ineffective prior to the end of the expected usable life while the barrier is still necessary, the fabric shall be replaced promptly.

D. Measurement and Payment

The quantity to be measured for payment under this section shall be the total number of linear feet of Silt Fence, installed and maintained in accordance with the plans, specifications and directions of the Engineer.

The bid price shall constitute full compensation for all labor, materials and equipment and incidental expenses necessary to complete the work in accordance with the plans and specifications and to the satisfaction of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
BMP-7.504A	Silt Fence	LF

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.505 SAND BAGS

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.506 SEDIMENT TRAP WITH FILTER

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.507 SEDIMENT FILTER

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.508 SEDIMENT BASIN

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.509-A STABILIZED CONSTRUCTION ENTRANCE

A. Description of Work

The Contractor shall furnish all materials, labor, and equipment necessary to construct the stabilized construction entrance specified herein and within the limits as shown on the Contract Drawings, including all incidental and appurtenant work required for a complete job.

Upon furnishing and installing the stabilized construction entrance but prior to commencing any other work on-site, the Contractor shall notify the Engineer and arrange for an on-site inspection.

The entrance shall be maintained in good condition and repaired as necessary by the Contractor during the construction phases as directed by the Engineer.

B. Materials and Methods

1. The entrance areas shall be cleared and stripped of all vegetation, roots and other objectionable material prior to installation of the access way as specified.

2. Provide surface drainage and divert excess runoff to stabilized areas as required and as directed by the Engineer.

3. Rock - use NYSDOT Size No. 3 coarse aggregate.

4. Thickness - not less than six (6) inches for rock.

5. Width shall be twelve (12) foot minimum.

6. Filter cloth shall be placed over the entire area prior to placing of stone. Filter cloth shall be as specified below.

   Filter cloth underliner shall be suitable for heavy duty construction traffic and have the following minimum properties:

Grab tensile strength	220 lbs.
Elongation at failure	220%
Mullen Burst Strength	430%
Puncture Strength	125 lbs.
Equivalent opening size	40-80 mm

   Filter cloth shall be Mirafi 600x, Beltech 315, TerraTexHD or approved equal.

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7. Surface water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.

8. Maintenance - the entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.

9. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.

10. Periodic inspection and needed maintenance shall be provided after each rain.

11. After completion of the project, the stabilized construction entrance shall be removed and regraded to its original condition. Prior to grading and planting, the area shall be tilled to lessen the compaction of the soils.

C. Maintenance

1. Maintenance of the stabilized construction entrance will include periodic inspection of the surface condition. Top dress with new gravel as needed. Any areas producing sediment should be treated immediately.

2. After completion of the project, the stabilized construction entrance shall be removed and the areas regraded to their original elevations. Prior to seeding and planting, the areas shall be tilled to lessen the compaction of the soils.

3. For those stabilized construction entrances that are in the beds of accessways, the rock can stay in place for use in accessways. (See specification for accessways.)

D. No Separate Payment

The contract price per unit for the Stabilized Construction Entrance shall be as indicated on the BID SCHEDULE OF PRICES, Item No. BMP-7.509-A. The bid price shall constitute full compensation for all labor, materials and equipment and incidental expenses necessary to complete the work in accordance with the plans and specifications and to the satisfaction of the Engineer.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.510 PORTABLE SEDIMENT TANK

A. Description of Work

The Contractor shall furnish all materials, labor and equipment necessary to install the portable sediment tank specified herein and as shown on the Contract Drawings. A sediment tank is a compartmented tank container through which sediment laden water is pumped to trap and retain the sediment.

The purpose of the portable sediment tank is to trap and retain sediment prior to discharging the water to wetlands, adjoining properties and rights-of-way below the sediment tank site. The sediment tank shall be located for ease of cleanout and disposal of the trapped sediment and to minimize the interference with construction activities and pedestrian traffic. The temporary relocation of the tank(s) during clean-out shall be included in the cost of this item. Relocating the tank(s) from one work area to another before, during and after construction shall be included in the cost of this item.

B. Design Criteria

The following formula should be used in determining the storage volume of the sediment tank: pump discharge (gpm) x 16 = cubic foot storage.

Certified pump curves are to be provided to ensure that the pump provided can meet the hydraulic requirements.

C. Tank Specifications

The portable sediment tank shall be an above ground horizontal single-wall UL-142 manufactured by Highland Tank or weir box manufactured by Rain for Rent or equivalent as approved by the Engineer.

The Contractor shall submit proposed sediment tanks for approval.

D. Maintenance

Portable sediment tanks shall be installed and maintained in accordance with Section 5A.47 of the New York Standards and Specifications for Erosion and Sediment Controls to the satisfaction of the Engineer.

The Contractor shall be responsible for cleaning out the sediment tank when silt reaches a depth of 6 inches. All sediment collected in the tank shall be disposed of in an approved location in which further sediment transport will not occur or as approved by the Inspector.

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

E. Measurement and Payment

The quantity to be paid for under this item shall be the number of portable sediment tanks placed in accordance with the plans and specifications to the satisfaction of the Engineer, measured in number of above items at the site of the work.

The Contract price per unit for portable sediment tanks shall be as indicated on the BID SCHEDULE OF PRICES, Item No. BMP-7.510. The bid price shall be a unit price per portable sediment tank and shall include the cost of all labor, materials and equipment necessary to furnish, place and incorporate and all other work incidental thereto, in accordance with the plans and specifications to the satisfaction of the Engineer.

* * * * *

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.511 STORM DRAIN - INLET PROTECTION MEASURES

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.512 DIRTBAG

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.513 SURFACE WATER COLLECTOR

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.514 TEMPORARY WATER BARRIER

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

7.515 JERSEY BARRIER

NO TEXT ON THIS PAGE

DIVISION VII - DETAILED SPECIFICATIONS –
CONTRACT HED564

7.516 TURBIDITY CURTAIN

A. Description of Work

1. The Contractor shall furnish, deliver and install a turbidity curtain in the water body adjacent to the work area to trap sediment and prevent migration of silt from the work site into the water body. The turbidity curtain is an impenetrable barrier supported at the top through a flotation system and weighted at the bottom to achieve closure.

2. The turbidity curtain shall be used when construction activity occurs along the water body shoreline. The turbidity curtain shall be in place prior to any work starting in the work area before any land disturbance activities are initiated. The turbidity curtain shall be removed within a week of completing the work.

3. The Turbidity Curtain shall be located beyond the lateral limits of the work area and firmly anchored in place. The alignment shall be set as close to the work area as possible but not so close as to be disturbed by construction equipment. The height of the curtain shall be 20% greater than the depth of the water at Mean Higher High Water to account for water level fluctuations and tidal range.

4. End anchors shall be provided, with intermediate anchor points (for stakes or anchors) such that unanchored spans do not exceed 100 feet, sufficient to maintain the turbidity curtain in place

B. Materials

1. Turbidity Curtain shall be per NYSDOT Sheet 209-06.

2. Turbidity Curtain shall be made from monofilament woven polypropylene with the following properties, or approved equal:

Composition:	5.8 oz/sq. yd. (ASTM D-4632)
Grab Strength	120 lbs (ASTM D-4533)
Trap Tear Strength	600 psi (ASTM 3786)
Burst Strength	150 psi (ASTM D-3787)
Elongation	70%, 500 hrs (ASTM D-4632)
UV Resistance	40 (ASTM D-4335)

3. Turbidity Curtain floats shall be 6 inch diameter expanded polystyrene logs providing a minimum of 9 lbs/ft buoyancy.

4. Curtain shall have 5/16 inch galvanized steel tension cable and 5/16 inch galvanized ballast chain, or approved equal.

5. Seams shall be double sewn with grommets.

6. Barrier connection shall be using marine grade quick connects.

C. Method

1. The area of proposed installation of the curtain shall be inspected for obstacles and impediments that could damage the curtain or impair its effectiveness to retain sediment.

2. All materials shall be removed so they cannot enter the water body.

3. Shallow installations can be made by securing the curtain by staking rather than using a flotation system. Supplemental anchors of the turbidity curtain toe shall be used, as needed, depending on water surface disturbances such as boats and wave action by winds.

D. Maintenance

1. The turbidity curtain shall be inspected daily and repaired or replaced immediately.

2. When necessary, or as directed by the Engineer, sediment removal shall be done by hand prior to removal of the barrier.

3. All removed silt shall be stabilized away from the water body.

4. The barrier shall be removed by carefully pulling it toward the construction site to minimize the release of attached sediment. Any floating construction or natural debris shall be immediately removed to prevent damage to the curtain.

5. If the curtain is oriented in a manner that faces the prevailing winds, frequent checks of the anchorage shall be made.

E. Measurement and Payment

The quantity to be measured for payment under this Section shall be the total number of linear feet, provided and placed, and removed upon the completion of work, as indicated on the Contract Drawings and as directed by the Engineer.

DIVISION VII - DETAILED SPECIFICATIONS – CONTRACT HED564

The contract price per linear foot of turbidity curtain shall be as indicated on the BID SCHEDULE OF PRICES Item No. BMP-7.516. The bid price shall constitute full compensation for all labor, materials, equipment and work incidental thereto, necessary to complete the work in accordance with the plans and specifications to the satisfaction of the Engineer.

* * * * *

(NO TEXT THIS PAGE)

U - PAGES

SECTION U (VERSION 2.0)

NOTICE

THE PAGES CONTAINED IN THIS SECTION U VERSION 2.0 (U-PAGES) REPRESENT ADDITIONAL CONTRACT REQUIREMENTS APPLYING TO WORK PERFORMED IN THE PRESENCE OF PRIVATELY OWNED UTILITY FACILITIES.

(NO TEXT ON THIS PAGE)

SECTION U (VERSION 2.0)

DATED: October 26, 2016

1. The Contractor shall be responsible for compliance with all the provisions of the following Sections and Schedules, which are hereby made a part of the original contract documents:

   A. "SECTION U: Additional Contract Requirements Applying to Work Performed in the Presence of Privately Owned Utility Facilities" (Pages U-3 through U-13)

   B. Schedule U-1 (Page U-15)

   C. Schedule U-2 listing scope of utility interferences is no longer included in City contract. Such information will be part of Interference Agreement between Utility Operator and the Contractor.

   D. Schedule U-3 Page U-16 (as per the Private Utilities reference document for SECTION U called "CET SPECIFICATIONS AND SKETCHES", dated November 2010).

2. Each facility operator shall provide inspectors at the work site to inspect methods of interference work, verify quantities and items of Utility Work, and coordinate all phases of the facility operator operations.

3. In addition, the following statements are made to provide clarification of various paragraphs under Section U:

   A. Section U, Paragraph 3, requires the Contractor to immediately commence negotiations with each Company for an Interference Agreement under which the Company will compensate the Contractor for any Interference Work which the Company does not elect to perform with its own forces or by specialty contractors retained by the Company. Thus the Contractor is on notice that its work under the Contract may be affected by Interference Work performed by (a) the Contractor pursuant to a separate Interference Agreement with the Company, (b) the Company, or (c) partly by each.

B. The City has no contract with any of the Companies for work on or adjacent to the site of work under this Contract, and the Companies are not "Other Contractors" as defined for the purposes of this Contract. The Contractor is reminded, however, that pursuant to Section U, Paragraph 3, the City will not compensate the Contractor for any direct and/or indirect costs related to Interference Work, regardless of whether such Interference Work is covered by an Interference Agreement between the Contractor and the Company or is performed by the Company using its own forces or by specialty contractors retained by the Company.

C. Section U, Paragraph 13, provides that the provisions of Section U are material provisions of the Contract and that the Contractor's failure to comply with the procedures set forth in Section U are sufficient for the Commissioner to declare the Contractor in default pursuant to Article 48 of the Contract.

Pursuant to this Section, the Contractor is informed that the Performance Bond required of the Contractor pursuant to the Contract is not deemed to guarantee performance of any of the Interference Work.

Section U: Additional Contract Requirements Applicable to Work Performed in the Presence of Privately Owned Utility Facilities

The Contractor is hereby notified that pursuant to the law and franchise agreements issued by the City, certain private utility and public service companies named in Schedule U-1 ("the Companies") own and/or operate surface and/or subsurface facilities within the limits of this contract. The existence of these facilities impacts the productivity of the City work called for in the contract. In order to improve coordination of the City construction with the private utility facilities owned and/or operated by the Companies named in Schedule U-1, Article 1.06.30 of the Standard Highway Specifications of the New York City Department of Transportation, Dated August 1, 2015; and/or Articles 10.15 through 10.18 of the Standard Sewer and Water Main Specifications of the New York City Department of Environmental Protection, Dated July 1, 2014; as applicable, are amended and will be implemented as follows:

1. ***Means and methods for City work***:

   a) The Contractor is hereby notified that the utility interferences may impact the performance of, and/or interferes with, City work. The Contractor will be required to perform such utility work as directed by the Resident Engineer in order to clear all utility interferences from the project site as required for satisfactory completion of City work within specified contract schedule.

   b) In areas serviced by overhead lines on poles carrying electric, telecommunication and cable system, the Contractor understands and by bidding for this contract agrees that he/she will be required to perform the public work in the presence of energized electrical overhead lines and appurtenances located in areas adjacent and/or within the project area. As a consequence he/she will select means and method of construction appropriate to maintain the safety clearances required or as permitted by electric operators in order to avoid damaging the insulation or shielding of these lines and also to prevent knocking them down.

2. *Field inspection prior to construction*:

Prior to the start of any contract work in areas serviced by overhead electric lines, and after the award to the apparent low bidder for this contract, the Contractor must request a field walk of the project area along with the operator of the overhead electrical facilities and the DDC Engineer-In-Charge. At that time the facility operator will confirm the type and condition of the overhead electrical lines and the sufficiency of their insulating properties with respect to the means and methods proposed by the Contractor. The Contractor must be prepared to describe in enough details his/her proposed means and methods of construction operations in order to anticipate the likelihood that electric lines insulation would be cut or otherwise compromised. Also such details will allow the facility operator to anticipate the need for added insulation and/or shielding of non-insulated lines.

3. *Compensation for interference work:*

Compensation for Interference Work is a matter of adjustment between the Contractor and each private utility company located within the limits of the project area and whose utility facilities are affected by City contract work. In particular, the City will not compensate the Contractor for any direct and/or indirect costs related to Interference Work, including, but not limited to, delay, lost profit, increased overhead, or any other impact costs. Upon receipt of a Notice of Award from the City, the Contractor shall immediately commence negotiations with each of the Companies concerning the manner in which and the price for which the Contractor, through its own forces or by others hired by it, will perform and be paid by the Company for all necessary Interference Work as defined above, and at known locations of City contract work, that the Company(ies) choose(s) not to perform with its(their) own forces or by specialty contractors hired by it (them) (as per "Interference Agreement"). Specialty contractors' work is limited to (i) insulation installation and removal, (ii) live gas and steam work, (iii) cleanup and disposal of hazardous materials, (iv) splicing live electrical and telecommunications facilities, and (v) work not traditionally performed by general construction contractors.

4. Interference Agreement:

a) Although the parties may negotiate an Interference Agreement in any format or manner they deem fit, the Contractor is hereby advised that the Companies have indicated to the City that they will agree to compensate the Contractor on a unit price basis for Types of Interferences encountered on this Contract in accordance to the Private Utilities reference document for SECTION U called "CET SPECIFICATIONS AND SKETCHES", dated November 2010, copy of which is available on demand.

b) The Contractor shall notify the City upon concluding an Interference Agreement with each of the Companies.

5. City contract work to continue without Interference Agreement :

If, prior to the start of construction, as directed by the City's Order to work / Notice To Proceed (OTW/ NTP) date any of the Companies and the Contractor have not concluded an Interference Agreement as described above, then the City shall issue a written "48 Hours' notice to Public Corporation" as prescribed by the City of New York Administrative Code, commonly referred to as "Order-Outs" and City construction will proceed as ordered and the Contractor will be directed by the Resident Engineer (RE) to perform the City work on Time, Material and Equipment basis (T&M) as specified in standard City contract agreement Article 26.2. T&M records will include identification of types of utility facilities interfering with City work, utility facility owners, specifying the nature and quantity of any materials, plant and equipment furnished or used in connection with the performance of such work and crew size, such as: name and number of each worker employed on such work. T&M records will also indicate the hours of active time, standby time and idle time. The Company (ies) and the Contractor will maintain separate records of the actual quantity and cost of labor, materials, and equipment expended, and will provide copies of this information to the other party on a daily basis for reconciliation. These T&M records along with cost evaluations will be submitted daily to the Resident Engineer for review and approval. The total cost of City work will be based on quantity of work performed multiplied by unit price contract bid items. The total interference cost will be calculated as the difference between the total

T&M cost and total cost for City work. The Resident Engineer will conduct a monthly reconciliation session of the daily T&M records with the affected Company (ies) and the Contractor. If the Contractor and affected utility companies cannot reconcile their T&M records, by the last day of each month, then the Resident Engineer will submit the approved City's T&M records along with total cost evaluations to the DDC Director of Construction who will review these records and recommend approval and validity certification by the DDC Construction Assistant Commissioner.

a) Copies of the DDC approved and certified T&M records will then be transmitted by the DDC to the Contractor and the utility companies. These certified records may be used by the Contractor for compensation claims against the responsible private facility owners, or may be used by any party as supporting documentation in dispute regarding compensation for performing Interference Work. The Contractor will be required to perform City work while invoices are submitted by the Contractor to the Utility companies for payment within 30 days, or while compensation disputes between the Contractor and affected company (ies) are submitted to Binding Arbitration process described in Paragraph 9.
b) All issues related to utility work and/or delays due to compensation disputes or claims against utility companies are not allowable as justification for granting contract time extensions or delay claims against the City. The City may assess liquidated damages specified in the contract for net overall delays suffered by City contract work as a result of utility issues, disputes and claims.
c) The standard City contract dispute resolution process specified in Article 27 "Presentation of disputes to Commissioner", of the standard City contract agreement is not applicable to any disputes related to utility work and/or compensation for such work or claim against utility companies. Utility work issues, disputes and claims may only be submitted to Binding Arbitration process described in Paragraph 9.
d) The Contractor will notify the Resident Engineer when utility work that require the intervention of company utility specialty crews causes excessive contractor's labor and equipment standby or idleness and, thereby jeopardizing the City project

schedule. The Resident Engineer will submit the facts to the DDC Director of Construction who will recommend to the DDC Deputy Commissioner regarding the issuance of a "48 Hours' notice to Public Corporation" to the concerned utility company as authorized by the New York City Administrative Code Section 19-143 and/or Section 24-521 as applicable.

e) Utility delays caused by utility and/or by unavailability of utility specialty crews cannot be discounted for earning any contractual bonus when such bonus clause is included in a contract. However, if such specified bonus is not earned or is disallowed by the City or if the City assesses specified liquidated damages as a result of such excessive delays, the Contractor may seek damages from the responsible utility company (ies).

6. Extra utility work with Interference Agreement:

If during construction the Contractor encounters utility facilities interferences or utility scope of work that it believes is not covered by the Interference Agreement as described above, then the Contractor shall immediately notify the Company in writing, with a copy to the City, describing the nature and location of the extra work in question. The Company then has five (5) business days to investigate the conditions and then:

a) Advise the Contractor and the City in writing that no interference with its facilities exists at the location in question, and hence that the Contractor may proceed with City work without providing for any impact from Company facilities;

b) Advise the Contractor and the City in writing that the Interference Agreement negotiated pursuant to Paragraph 4, provides for the scope of work encountered.

c) Advise the Contractor and the City in writing that it intends to perform the necessary utility Work with company forces or with its own contractor including, but not limited to, relocating its facility out of the way of the proposed City work. In this case, the Company shall provide a written schedule for the performance of the utility work it proposes to perform, which shall be subject to approval by

the City based on its impact to the Contractor's currently approved progress schedule. Upon approval of the Company's schedule by the City, the Contractor shall provide access to the worksite to the Company and/or any contractors hired by it to perform this utility work. If necessary, the City may grant a contract time extension for delays caused by the performance of such utility work by the company.

d) Reasonably specify in writing the scope of work to be performed by the Contractor on behalf of the Company that is not covered under the Interference Agreement negotiated pursuant to Paragraph 5, including, but not limited to, relocating, supporting, and/or protecting the Company's facilities, and/or shifting the City facility if approved by the Resident Engineer, and/or otherwise changing its operations to work in the presence of the Company's facilities. Should the Company elect this option, it must adequately define and provide an initial price offer for the work required to be performed.

7. Means and Methods for utility work:

Upon receipt of the Company's determination pursuant to Paragraphs 6.b, or 6.d, above, the Contractor shall determine reasonable means and methods of performing the work defined by the Company. These means and methods are subject to approval of the Company, which shall not be unreasonably withheld. If, however, the Company objects to the Contractor's proposed means and methods then it shall define an alternate method of construction. Upon receipt of the Company's approval or its proposed alternate method of construction, the Contractor shall commence performance of the work defined by the Company as soon as possible, and shall perform the work in a good, workmanlike, and efficient manner, using the means and methods approved by the Company, in order to permit the City work to proceed in the most expeditious manner possible, but without imposing unreasonable and/or unnecessary costs on the Company. It is expressly understood by all parties that the City's rights pursuant to Article 4 of the Contract apply to Utility Work performed pursuant to this Section.

8. Disputed utility work covered by an interference agreement:

The City Work will continue as described in Paragraph 5 above. In the event of any dispute between the Company (ies) and the Contractor regarding any issue related to the performance of, or payment for, utility work, including, but not limited to, any indirect or impact costs incurred by the Contractor due to the Utility Work and/or to the existence of facilities owned or operated by the Company (ies) on the line of the work. The Company (ies) and the Contractor hereby agree to submit to each other a "Final Offer," in writing, by certified mail. Each party shall then have three business days to consider each other's Final Offer. In the event that neither party accepts the other's Final Offer within those three days, the Company (ies) and the Contractor agree to immediately submit the dispute to binding arbitration as described in Paragraph 9. During the pendency of any arbitration, the Company (ies) and the Contractor shall maintain separate records of the actual quantity and cost of labor, materials, and equipment expended, and to provide copies of this information to the other party on a daily basis for reconciliation. Any and all disagreement with the records maintained and provided by the other, must be documented in writing to all parties. However, these records are solely for the benefit of presentation to the arbitrator, whose decision may not necessarily be based on these records and in any event is final. Both parties should be aware that the City will not confirm or deny the accuracy of any records that is not certified by DDC.. While the arbitration is pending, the Company shall pay the Contractor on a monthly basis, based on the price offered by the Company to the Contractor for the performance of the work.

9. Arbitration of utility work:

The arbitration of the issues described above shall be conducted pursuant to the Construction Industry Arbitration Rules of the American Arbitration Association (hereinafter "the Rules" and "AAA") in effect on the date the arbitration is initiated except as set forth herein. The arbitration award shall be final and binding upon the parties to the arbitration and judgment upon the award may be entered in a court having jurisdiction.

(a) Once an arbitrator(s) has been appointed by the AAA, the arbitration shall be scheduled as promptly as possible given the arbitrator(s) and the parties' schedules.

(b) No later than seven days prior to the first arbitration hearing, Company and the Contractor shall submit to the arbitrator(s), and to each other, a summary of each party's respective position and such other information as is deemed appropriate, along with a copy of each party's Final Offer as specified in Paragraph 8.

(c) The arbitration shall be conducted and concluded in two days.

(d) On the morning of the first day of the arbitration, the Contractor and/or representatives shall have 3 ½ hours to make a presentation of its claim to the arbitrator. During its presentation, the Contractor shall not be permitted to produce any documents or cost records which have not already been provided to the Company. The Contractor shall be permitted to produce any analysis or description of its claim which has been prepared for the purpose of its presentation.

(e) Company and/or its representatives shall have two hours to ask the Contractor questions about its claim and its presentation. Thereafter the arbitrator(s) shall have two hours to ask the Contractor questions about its claim and its presentation.

(f) On the morning of the second day of the arbitration, Company and/or its representatives shall have 3 ½ hours to make a presentation of its claim to the arbitrator. During its presentation, the Company shall not be permitted to produce any documents or cost records which have not already been provided to the Contractor. The Company shall be permitted to produce any analysis or description of its claim which has been prepared for the purpose of its presentation.

(g) The Contractor and/or its representatives shall have two hours to ask Company questions about its claim and its presentation. Thereafter the arbitrator(s) shall have two hours to ask Company questions about its claim and its presentation.

(h) Subject to the above time limitations, the arbitrator(s) may conduct the arbitration in such manner as the arbitrator(s) deems reasonable.

(i) The arbitrator(s) shall then have one week to select in writing, as the arbitrator ('s) award, that party's Final Offer which appears to be more reasonable, based on the presentations at the arbitration hearings.

(j) The arbitrator shall have no discretion to grant an award other than one of the two Final Offers submitted by the parties.

(k) Any award for work that has already been performed shall be paid on the 7th day after receipt of the arbitrator's decision, or on the 30th day after completion of the work, whichever is later. Payment for work not yet completed at the time of the arbitrator's decision shall be paid within 30 days of completion of work. Interest shall accrue from the date payment is due at the rate of 9% per annum. Either party may cause judgment to be entered in accordance with the arbitrator(s) decision in a court in the State of New York, County of New York.

(l) The arbitrator's fees and any other costs of the arbitration shall be initially shared equally by Company and the Contractor. The non-prevailing party shall then pay all arbitrator's fees and costs of the arbitration and shall reimburse the prevailing party for its share of such fees and costs theretofore paid.

(m) The parties may, at any time, settle any matter submitted to arbitration.

10. Order-out waiver:

The Contractor and all subcontractors hired by it, if an Interference Agreement is executed as specified between the concerned parties, agree to waive any rights they may have, if any, under law, contract or otherwise to compel the City to assert any right the City may have, including the issuance of any directives required under the New York City Administrative Code, Section 19-143 and Section 24-521, to require any or all of the Companies to maintain, repair, replace, protect, support, shift, alter, relocate, and/or remove utility facilities in connection with the work to be performed under this contract. However, nothing in this Section shall preclude the City from exercising its rights under the Law to issue such a directive to the Company.

11. Cost of insurance:

Each of the named Companies, at their option and if an Interference Agreement is executed as specified between the concerned parties, may be named as an additional insured on all insurance policies required to be maintained under this contract. In the event that a Company opts to be so named as an additional insured, the actual incremental cost, if any, to the Contractor of providing such insurance coverage shall be borne by that Company. The Contractor shall provide a written statement from its insurance provider documenting the actual cost of this added coverage to the Company. Under no circumstances shall the cost of insurance coverage on behalf of any Company be borne by the City. Nothing in this paragraph shall be interpreted to imply the City's acceptance of any additional responsibility or liability for any matter related to the performance of Utility Work. In particular, the Company and the Contractor bear joint and full responsibility to ensure that any Utility Work performed by the Contractor is in compliance with all applicable government and Company regulations.

12. Cost of utility interference work:

The Companies, by virtue of a prior agreement with the City, have agreed to perform their obligations described in this section. It is expressly understood that the cost of Utility Work or any delays cost caused by such utility work shall not be a charge against the City, but shall be a matter for adjustment between the Contractor and the Company or Companies concerned. The City and the Contractor agree that the Companies are third party beneficiaries of this Section of the contract, if an Interference Agreement is executed between the Contractor and utility company (ies). The provisions of this Section shall govern in all cases where Company property interferes with or is about to be disturbed by the City work, notwithstanding any other provision of the Contract, except for Natural Gas transmission/distribution facilities covered subject to the Gas Facility Cost Allocation Act (GFCAA) and covered separately in this contract.

13. Default declaration:

The Contractor agrees that the provisions of this Section are material provisions of the contract, and that the Contractor's failure to comply with the procedures set forth above are sufficient for the Commissioner to declare the Contractor in default pursuant to Article 48 of the Contract.

14. NYS Labor Law:

The Contractor is hereby advised that New York State Labor Law and/or, Davis-Bacon Act if federally funded, applies to public work. The work described in this Section U of the contract performed by utility company (ies) with their own forces or vendors hired by such company (ies) is not public work.

15. Facility operators:

The insurance requirements in Paragraph 11 of this Section U apply to: (i) additional Companies, if any, who were not named in Schedule "A" but which have executed an Interference Agreement with the Contractor for utility work; and (ii) additional coverage, if any, paid for by Utility Companies whose utility facilities are located within the project limits, that they may require for the utility work pursuant to an Interference Agreement between the Contractor and such utility company (ies).

[End]

"STANDARD UTILITY LETTER OF AGREEMENT"

(Name)
Deputy Commissioner, Infrastructure Division
Department of Design and Construction
30-30 Thomson Avenue
Long Island City, NY 11101

RE: City Work Performed in the Presence of Private Utility Facilities
Project No: _____

Dear (Name):

This letter is to certify that _____, has requested the inclusion of the attached "Section U: Additional contract requirements applying to work performed in the presence of privately owned utility." The company agrees to abide by the terms of this Section U at the company's own expenses due to their facilities interferences with the Public work.

Sincerely,

_____
By: Authorized Company Representative

_____
Title

NOTARY PUBLIC

CERTIFIED AS TO FORM
AND LEGAL AUTHORITY:

By:_____

SCHEDULE U-1

LISTING OF COMPANIES NAMED FOR THIS CONTRACT

COMPANY NAME	CONTACT NAME	CONTACT TELEPHONE
CON EDISON	THERESA KONG	212-460-4834
VERIZON	AUBREY MAKHANLALL	718-977-8165

SCHEDULE U-3

(NO TEXT IN THIS SECTION)

GEOTECHNICAL DATA REPORT
FOR
NEW 20-INCH SUB-AQUEOUS WATER MAIN TO CITY ISLAND
EASTCHESTER BAY CROSSING (CITY ISLAND BRIDGE)
BOROUGH OF THE BRONX

DDC Project No. HED 564
SES No. 3990
Work Order No. 8324-CDM-7801
Contract Registration No. 2012008687

Prepared for:

NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

Division of Safety and Site Support
Bureau of Environmental and Geotechnical Services
30-30Thomson Avenue
Long Island City, NY 11101

Prepared by:
CDM Smith
14 Wall Street, Suite 1702
New York, NY, 10005

December 13, 2012

TABLE OF CONTENTS

SECTION		Page
EXECUTIVE SUMMARY		ES-1
1.0	INTRODUCTION	1
2.0	PROJECT DESCRIPTION	1
3.0	PREVIOUS INVESTIGATION	1
4.0	PURPOSE AND SCOPE OF WORK	1
5.0	SITE CONDITIONS AND REGIONAL GEOLOGY	2
6.0	METHOD OF SUBSURFACE EXPLORATION	2
7.0	RESULTS OF SUBSURFACE EXPLORATION AND TESTING	4

FIGURE
FIGURE 1 – Site Location Plan

APPENDICES
APPENDIX A – Record of Boring, August 2012
APPENDIX B – Geotechnical Laboratory Test Results, August 2012
APPENDIX C – Rock Core Photo Logs
APPENDIX D – Packer Test Data
APPENDIX E – Tidal Gauge Benchmark

EXECUTIVE SUMMARY

At the request of the New York City Department of Design and Construction Bureau of Environmental and Geotechnical Services, hereafter "NYCDDC", CDM Smith, prepared this Geotechnical Data Report presenting results of the subsurface exploration program for the New 20-inch Sub-Aqueous Water Mains to City Island, in The Bronx, New York, hereafter "the Site". CDM Smith provided oversight of the subsurface exploration program under CDM Smith's task order contract with the NYCDDC for Geotechnical Engineering Services for Various Projects.

The site is located south of the City Island Road crossing over the Eastchester Bay from Pelham Bay Park to City Island, in The Bronx, New York. The site is located South of City Island Road, and West of City Island, East of Pelham Bay Park, and North of Eastchester Bay. The ground surface at the land test borings on the west side of the site ranges between El. 14 and El. 19 and the ground surface at the land borings at the test boring on the east side of the site was approximately El. 10.1. All elevations are based upon the Borough of The Bronx Datum which is 2.60 feet above mean sea level at Sandy Hook as established by the U.S. Coast & Geodetic Survey. A new 20-inch-diameter water main is proposed to cross the Eastchester Bay from Pelham Bay Park on the west bank to City Island on the east bank. The water main is proposed to be constructed using trenchless methods. The specific method of installation is currently under evaluation.

CDM Smith reviewed the Record of Borings developed in May 2003 by Vollmer Associates, LLP under SES# 3130A.

CDM Smith provided oversight of (12) test borings, five (5) on land and seven (7) over water (marine borings), were conducted to depths between 30 and 183 feet, below ground surface, (bgs) or mudline. Bedrock was encountered at all twelve (12) test boring locations and bedrock was cored at each location.

The land test borings (B-1 throuhg B-3, B-5, and B-11) were conducted between June 21 and August 21, 2012. The subsurface soils encountered in the land boring can be described by the following stratigraphy:

- Fill: The Fill stratum consisted of brown fine to course Sand, trace silt, trace asphalt, and trace brick with a variable amounts of gravel. The Fill was approximately 9 feet thick at B-11. Based on the soil and rock classification system of the Code, the material is considered to be Class 7, Controlled and Uncontrolled Fill.

- Sand: The Sand stratum typically include fine to coarse Sand, with varying amounts of gravel, silt and clay. Where encountered, the top of this stratum ranged between approximately 0 to 9 feet bgs and was approximately 13.5 to 20 feet thick. According to the Code, the soil of this stratum falls under the following class of material: Class 3a/3b, Medium Dense to Dense Granular Soils.

The marine test borings (B-6 though B-10, B-12, and B-13) were conducted between June 6, and July 11, 2012. The subsurface soils encountered in the marine boring can be described by the following stratigraphy:

- Silt and Clay: The Silt and Clay stratum typically include Silt and Clay, with varying amounts fine sand and shells. Where encountered this stratum ranged between approximately 4 to 8 feet thick. According to the Code, the soil of this stratum falls under the following class of material: Class 6, Soft Clays.
- Sand: The Sand stratum typically include fine to coarse Sand, with varying amounts of gravel, silt and clay. Where encountered, the top of this stratum ranged between approximately 3 to 9 feet below mudline and was approximately 3 to 19 feet thick. According to the Code, the soil of this stratum falls under the following class of material: Class 3a/3b, Medium Dense to Dense Granular Soils.

At both the land borings and marine borings bedrock was encountered and consisted of:

- Decomposed Rock: The Decomposed Rock strata were encountered above Bedrock. The Decomposed Rock was residual soil composed primarily of fine to medium Sand and included varying amount gravel and silt. The top of this stratum was encountered at depth that ranged from approximately 4 to 30 feet bgs or mudline and the thickness of the stratum is approximately 1.5 to 12 feet. According to the Code, the soil of this stratum falls under the following class of material: Class 1d, Soft Rock – Weathered Rock.
- Bedrock: Bedrock was encountered from approximately 6 feet to 20 feet bgs. The top of the bedrock ranged in elevation from approximately El. -42.8 at B-10 to El. 5 at B-3. The bedrock generally consisted of fresh to slightly weathered, fine to medium grained, gneiss, with recovery percent ranging from 23 percent to 100 percent with an average recovery of about 95 percent. RQD values ranged from 3.8 percent to 100 percent with an average RQD of about 79 percent. According to the Code, the soil of this stratum falls under the following class of material: Class 1a or 1b, Hard Sound Rock or Medium Sound Rock.

Packer tests were by performed by the CDM Smith geotechnical engineer with assistance from the Warren George Inc. (WGI) drilling crew. Two Packer tests were conducted in all boreholes except for B-1, B-2 and B-10 upon completion of drilling and sampling. The test depths and water pressure estimation procedure were provided by the NYCDDC.

Two observation wells were installed at test boring locations B-3 and B-11 at the completion of sampling. The water level in observation well B-3 was measured at depths between 8.0 and 7.3 bgs (El. 11 to El. 11.7). The water level in observation well B-11 was measured at depths between 10.4 and 8.1 bgs (El. -0.3 to El. 2.0).

No soil corrosivity testing data was conducted as part of the current scope of work.

1.0 INTRODUCTION

At the request of the New York City Department of Design and Construction Bureau of Environmental and Geotechnical Services, hereafter "NYCDDC", CDM Smith, prepared this Geotechnical Data Report presenting results of the subsurface exploration program for the New 20-inch Sub-Aqueous Water Mains to City Island, in The Bronx, New York, hereafter "the Site". CDM Smith provided oversight of the subsurface exploration program under CDM Smith's task order contract with the NYCDDC for Geotechnical Engineering Services for Various Projects.

2.0 PROJECT DESCRIPTION

The site is located south of the City Island Road crossing over the Eastchester Bay from Pelham Bay Park to City Island, in The Bronx, New York. The site is located South of City Island Road, and West of City Island, East of Pelham Bay Park, and North of Eastchester Bay. The location of the site is shown on Figure 1.

Based on the discussion with NYCDDC, the proposed construction includes the following:

- A new 20-inch-diameter water main is proposed to cross the Eastchester Bay from Pelham Bay Park on the west bank to City Island on the east bank. The water main is proposed to be constructed using trenchless methods. The specific method of installation is currently under evaluation.

Elevations for marine test borings were referenced to tidal gauge Benchmark OV-1001 located on the eastern bridge abutment of City Island Road which is at El. 18.81. All elevations are based upon the Borough of The Bronx Datum which is 2.60 feet above the mean sea level at Sandy Hook as established by the U.S. Coast & Geodetic Survey.

3.0 PREVIOUS INVESTIGATION

CDM Smith reviewed the previous Record of Borings prepared by Vollmer Associates, LLP of Ronkonkoma of New York, dated May 1, 2003 for SES # 3130A.

4.0 PURPOSE AND SCOPE OF WORK

Based on Task ID # 8324, six (6) land test borings and five (5) marine test borings were proposed to explore the subsurface conditions along the proposed alignment. However, at the time of the subsurface exploration program the scope was altered to include two (2) additional marine test borings and one (1) fewer land test boring along the proposed alignment.

CDM Smith's revised scope of work included oversight of twelve (12) test borings, seven (7) marine test borings and five (5) land test borings, geotechnical laboratory testing and preparation of this Geotechnical Data Report.

CDM Smith prepared a Record of Boring in accordance with the NYCDDC procedures and guidelines. The Record of Boring includes a boring location plan, log of the test borings, and a table summarizing the results of the laboratory testing analyzed for soil index properties. A copy of the Record of Boring is included in Appendix A. A separate report presenting the results of the laboratory testing was also prepared. A copy of the results of the laboratory testing is included in Appendix B.

5.0 SITE CONDITIONS AND REGIONAL GEOLOGY

The site is located south of the City Island Road crossing over the Eastchester Bay from Pelham Bay Park to City Island, in The Bronx, New York. The site is located South of City Island Road, and West of City Island, East of Pelham Bay Park, and North of Eastchester Bay. The ground surface at the land test borings on the west side of the site ranges between El. 14 and El. 19 and the ground surface at the land borings at the test boring on the east side of the site was El. 10.1.

At the Site, marine sediments overlay (only at the water test boring locations) glacial deposits over decomposed rock and bedrock. The bedrock at the project site is Hartland Formation, a rock that consists of granitic and garnetiferous amphibolite gneiss with numerous quartz veins.

6.0 METHOD OF SUBSURFACE EXPLORATION

Under the current scope of work twelve (12) test borings, five (5) on land and seven (7) over water, were conducted to depths between 30 and 183 feet bgs or mudline. Bedrock was encountered at all twelve (12) test boring locations and bedrock was cored at each location. The test borings were conducted between June 6, and August 21, 2012. The drilling and soil sampling were performed by Warren George, Inc hereafter WGI, of Jersey City, New Jersey under a separate direct contract with the NYCDDC.

WGI advanced the land test borings with a track-mounted drill rig to depths between 30 to 175 feet bgs by mud rotary drilling and rock coring methods. WGI advanced the water test borings with a barge mounted drill rig to depths between 99 to 183 feet below mudline by mud rotary drilling and rock coring methods. Four-inch-diameter and three-inch-diameter steel casing was seated at the top of the rock to facilitate drilling, which was retrieved upon completion of drilling. The length of steel casing ranged from 20 feet to 30 feet below ground surface or mudline. The location of the test borings are shown on the Record of Boring in Appendix A.

For the land test borings, soil samples were collected at 5 foot sampling intervals until bedrock was encountered. For the water test borings, soil samples were collected continuously for the first 8 feet and then at 5 foot sampling intervals until bedrock was encountered. Standard Penetration Testing (SPT) was conducted in accordance with *ASTM D-1586, Standard Method for Penetration Test and Split-Barrel Sampling of Soils*. The soil samples in the boring were collected with a standard 2-inch diameter split spoon sampler. An automatic hammer was used to advance the split spoon sampler for the water test borings and a donut or safety hammer was used to advance the spilt spoon sampler for the land test borings. Rock coring was conducted at all twelve (12) test boring locations where split spoon refusal was encountered. Rock coring was conducted using an NQ core barrel and techniques in accordance with *ASTM D-2113, Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation*. In the field, core samples were analyzed by a CDM Smith representative for percent recovery and rock quality designation (RQD). The RQD was determined for each core run by dividing the total length of the rock segments longer than four inches by the total length of the core run. The time to advance each foot of rock core was also recorded during the rock coring process. The logs of the test borings are presented on the Record of Borings included in Appendix A.

The test borings were advanced under the full time observation of CDM Smith's field engineer (supplemental inspector), who recorded blow counts on the split spoon sampler, described the subsurface materials recovered in the sampler, collected soil samples, calculated percent recovery and RQD for rock core samples, collected rock core samples, and retained selected rock core and soil samples for possible laboratory testing.

Packer tests were by performed by the CDM Smith geotechnical engineer with assistance from the WGI drilling crew. Two Packer tests were conducted in all boreholes except for B-1, B-2 and B-10 upon completion of drilling and sampling. The test depths were provided by the NYCDDC. The tests were performed using two inflatable packers, valves, gages and hoses. Two inflatable packers ten (10) feet apart were installed on a steel perforated 1-inch-outside-diameter (3/4-inch-inside-diameter) pipe. Compressed Nitrogen gas was used to inflate the packers. After each test, the packers were raised the length of the test section, and the second test was conducted in the borehole. Water under pressure was pumped using a positive displacement pump (i.e. Moyno pump on the drill rig). The water pressure was controlled using a valve system. The water pressure estimation procedure was provided by the NYCDDC. The tests were run until three or more reading of water (rate of water pumped) was equal or within +/-10 percent. Packer testing data is included in Appendix D.

Two observation wells were installed at test boring locations B-3 and B-11 at the completion of sampling at each respective location. The wells were constructed with Schedule 40, 20 slot screen PVC with 50 feet of 2-inch-diameter well screen at B-3 and 70 feet of 1.25-inch-diameter well screen at B-11 at the bottom and solid riser pipe to the ground surface. At B-11 the annulus around the well screen was backfilled with sand from the bottom of the borehole to the bottom of the riser pipe and was sealed from the bottom of the riser pipe to the ground surface with bentonite chips. At B-3 the annulus around the well screen was backfilled with sand from the bottom of the borehole to the bottom of the riser pipe and was then sealed with 4 feet of bentonite chips. The annulus around the well was backfilled with sand from the bentonite seal to 4 feet bgs and was filled with bentonite chips from 4 feet bgs to ground surface. A flush mounted, protective casing was installed at the surface of the well.

A CDM Smith geotechnical engineer reviewed the field logs and developed a laboratory testing program. The testing program included the determination of grain size distribution and moisture contents on selected soil samples and Uniaxial Compressive Strength, Indirect Tensile Strength (Brazilian), CERCHAR abrasiveness tests, and petrographic analysis on selected rock core samples to confirm field descriptions, aid in the classification of the soils, and estimate engineering properties. The soil index testing was performed by CDM Smith's geotechnical soil testing laboratory in Somerville, Massachusetts. CDM Smith has contracted a subcontractor laboratory for the rock core sample testing. The rock core sample testing was performed by GeoTesting Express in Acton, Massachusetts.

7.0 RESULTS OF SUBSURFACE EXPLORATION AND TESTING

7.1 SOILS ENCOUNTERED - LAND TEST BORINGS

The subsurface soils encountered in the land test borings from the recent subsurface exploration program can be described by the following strata: Fill; Sand; Decomposed Rock; and Bedrock. Descriptions of the decomposed bedrock and bedrock are included in Section 7.3. Results of laboratory tests conducted on select soil and rock samples are included in Appendix B.

Fill

A Fill stratum was encountered at test boring B-11 and typically consisted of brown fine to course Sand, trace silt, trace asphalt, and trace brick with a variable amounts of gravel. The one SPT N-value (the sum of the SPT values for the 6 to 12 inches and 12 to 18 inches intervals that the standard spilt spoon sampler was driven by a 140 pound hammer falling 30 inches) was taken in the stratum and it was 7, indicating that the material is loose. The Fill was approximately 9 feet thick at B-11. Based on the soil and rock

classification system of the Code, the material is considered to be Class 7, Controlled and Uncontrolled Fill.

Laboratory testing was performed on one (1) sample collected in this stratum to determine the water content and grain size distribution. The water content of the tested sample was 27.8 percent. The amount of sand found in the sample was 42.2 percent. The amount of gravel found in the sample was 44.8 percent. The amount of material passing the No. 200 sieve, or the amount of fines, was 12.8 percent.

Sand

A Sand stratum was encountered from ground surface at test boring locations B-1 through B-5 and below the fill at B-11. The soils of this stratum typically include fine to coarse Sand, with varying amounts of gravel, silt and clay. The average SPT N-value was 58 blows per foot, indicating that the material is dense. Where encountered, the top of this stratum ranged between approximately 0 to 9 feet bgs and was approximately 13.5 to 20 feet thick. According to the Code, the soil of this stratum falls under the following class of material: Class 3a/3b, Medium Dense to Dense Granular Soils.

Laboratory testing was performed on two (2) samples collected in this stratum to determine the water content and grain size distribution. The water content of the tested samples ranged from 10.9 percent to 18.3 percent. The amount of sand found in the samples ranged from 61.7 percent to 67.4 percent. The amount of gravel found in the samples ranged from 2.2 percent to 14.9 percent. The amount of material passing the No. 200 sieve, or the amount of fines, ranged from 23.4 percent to 30.4 percent.

7.1.1 GROUNDWATER

The water level in observation well B-3 was measured at depths between 8.0 and 7.3 bgs (El. 11 to El. 11.7). The water level in observation well B-11 was measured at depths between 10.4 and 8.1 bgs (El. -0.3 to El. 2.0).

The water level measured in the observation well from the recent subsurface exploration program by CDM Smith is shown on the Record of Borings included in Appendix A. Water levels measured in the explorations should not necessarily be considered to represent stabilized groundwater levels. In addition, water levels are expected to change with time, season, temperature, tide, and construction activities in the area, as well as other factors. Groundwater conditions at the time of construction may be different from those found in explorations.

7.2 SOILS ENCOUNTERED - MARINE TEST BORINGS

The subsurface soils encountered in marine test borings from the recent subsurface exploration program can be described by the following strata: Silt and Clay; Sand; Decomposed Rock; and Bedrock. Descriptions of the decomposed bedrock and bedrock are included in Section 7.3. Results of laboratory tests conducted on select soil and rock samples are included in Appendix B.

Silt and Clay

A Silt and Clay stratum was encountered below mudlineat the water test boring locations (B-6 through B-10 and B-12 and B-13). The soils of this stratum typically include Silt and Clay, with varying amounts fine sand and shells. The average SPT N-value was weight of hammer (WOH), indicating that the material is very soft. Where encountered this stratum ranged between approximately 4 to 8 feet thick. According to the Code, the soil of this stratum falls under the following class of material: Class 6, Soft Clays.

Sand

A Sand stratum was encountered below the Silt and Clay at the marine test boring locations (B-6 through B-10 and B-12 and B-13). The soils of this stratum typically include fine to coarse Sand, with varying amounts of gravel, silt and clay. The average SPT N-value was 32 blows per foot, indicating that the material is dense. Where encountered, the top of this stratum ranged between approximately 3 to 9 feet below mudline and was approximately 3 to 19 feet thick. According to the Code, the soil of this stratum falls under the following class of material: Class 3a/3b, Medium Dense to Dense Granular Soils.

7.3 BEDROCK ENCOUNTERED – LAND AND MARINE TEST BORINGS

Decomposed Rock

At test borings B-1, B-2, B-6, B-7, B-8, B-10, B-11, and B-13 a strata of Decomposed Rock was encountered above Bedrock. The Decomposed Rock was residual soil composed primarily of fine to medium Sand and included varying amount gravel and silt. The top of this stratum was encountered at depth that ranged from approximately 4 to 30 feet bgs or mudline and the thickness of the stratum is approximately 1.5 to 12 feet. The SPT N-values range from 62 blows per foot to 100 blows with no advancement, indicating that the material is very dense. According to the Code, the soil of this stratum falls under the following class of material: Class 1d, Soft Rock – Weathered Rock.

Bedrock

All twelve (12) of the test borings, penetrated into the underlying bedrock stratum. The top of this stratum was encountered from approximately 6 feet to 20 feet bgs or mudline. The top of the bedrock ranged in elevation from approximately El. -42.8 at B-10 to El. 5 at B-3. The bedrock generally consisted of fresh to slightly weathered, fine to medium

grained, gneiss, with recovery percent ranging from 23 percent to 100 percent with an average recovery of about 95 percent. RQD values ranged from 3.8 percent to 100 percent with an average RQD of about 79 percent. According to the Code, the majority of rock of this stratum falls under the following class of material: Class 1a or 1b, Hard Sound Rock or Medium Sound Rock. However, isolated samples of Class 1c, Intermediate Rock, and Class 1d, Soft Rock – Weathered Rock, were observed at the test boring locations.

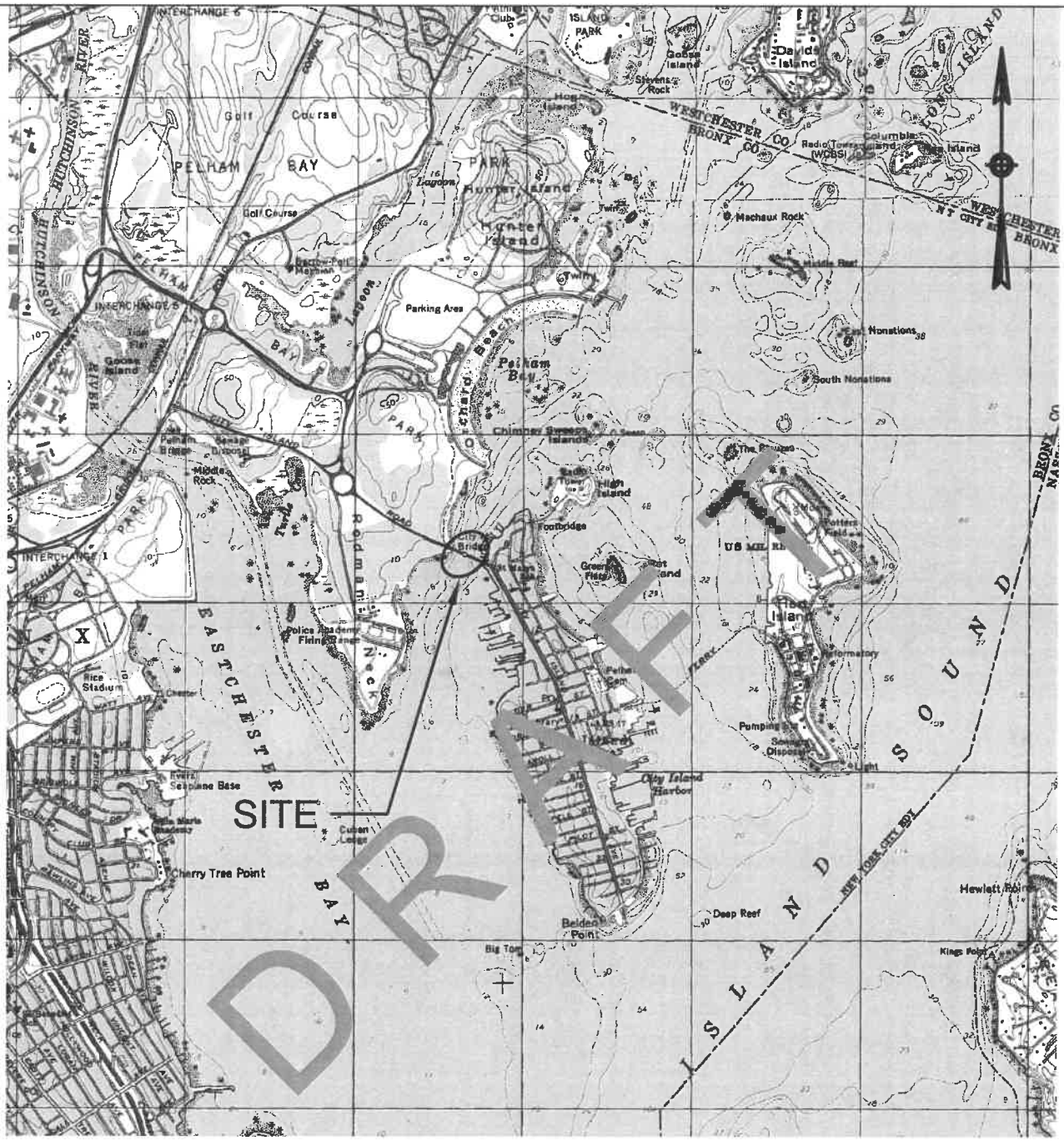
Bedrock Laboratory Testing

Laboratory testing was performed on one hundred fifty-seven (157) samples collected; fifty-four (54) compressive strength tests, fifty-four (54) tension strength tests, forty (40) CERCHAR abrasiveness tests, and nine (9) thin section petrographic analysis tests. The compressive strength tests were conducted in accordance with ASTM D7012 Method C on the core specimens collected. The compressive strength of the tested specimens ranged from 1,045 to 19,849 psi with an average strength of 10,300 psi. The splitting tensile strength tests were conducted in accordance with ASTM D3967 on the core specimens collected. The splitting tensile strength of the specimens ranged from 261 to 1650 psi with an average strength of 1035 psi. The abrasiveness of the specimens using the CERCHAR method ASTM D7625 ranged from "Low" to "Extreme" and was generally either "High" or "Extreme". Results of the bedrock laboratory tests are included in Appendix B.

Photograph logs of the rock core runs were prepared for the rock core specimens collected and are included in Appendix C. In-situ rock permeability determination packer testing was conducted at select test borings and depths. Packer testing data is included in Appendix D.

FIGURE 1

Site Location Plan



MAP SOURCE:

FLUSHING USGS 7.5 MIN QUADRANGLES
CORNELL UNIVERSITY GEOSPATIAL INFORMATION (CURGIR)

DDC	CITY OF NEW YORK DEPARTMENT OF DESIGN & CONSTRUCTION DIVISION OF SAFETY AND SITE SUPPORT
3990	PREPARED FOR: BUREAU OF ENVIRONMENTAL AND GEOTECHNICAL SERVICES PREPARED BY: CDM SMITH, 14 WALL STREET, SUITE 1702, NEW YORK, NY 10005
WORK ORDER NO. 8324-CDM-7801	20 INCH SUB-AQUEOUS WATER MAIN TO CITY ISLAND BOROUGH OF THE BRONX
FIGURE NO. 1	SITE LOCATION PLAN DATE: SEPTEMBER 13, 2012 / SHEET: AS NOTED / SHEET: 1 OF 1

APPENDIX A

Record of Boring, September 2012

IMPORTANT NOTE

The Boring Logs shown on this sheet are the result of inferences drawn by the engineers or scientific personnel during boring operations at the site, and from certain visual evidence such as: (1) samples of subsurface materials recovered during boring operations; (2) the logs kept by the drill operator and the inspector, which contain, among other things, expression of their opinions as to the nature of subsurface materials encountered during boring operations; and (3) other records concerning the site deemed pertinent by the engineers. The driller's log, the inspector's log, the samples and the records , together with the engineer's reports, are made available for inspection and study by the bidders so that they may draw their own inferences from all of the available evidence.

Bidders are warned that in the subsurface, other than that actually penetrated by the borings, obstructions, both natural and man-made, and which are not indicated on the Boring Logs, may be encountered, and that the Boring Logs make no representations or warranties either as to the presence or absence of such obstructions, or as to their nature and extent. 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 his own inspection of the site.

In addition, bidders are warned that in the subsurface other than that actually penetrated by the borings, soil or rock may vary widely, with regard to elevation, composition, texture, structure, perviousness, soundness, and other characteristics, from the descriptions given on the Boring Logs and all reports.

The "water reading", shows the elevation of water in the boring holes at the times indicated. They may or may not indicate the elevations of perched water or true ground water table during boring operations or subsequently.

EXPLANATION OF TERMS

SOIL SIZES

Description Term	Pass Sieve No.	Retained Sieve No.	Size Range
Clay	200	Atterberg Limits, Hydrometer Analysis	< .005 mm.
Silt	200		.005 to .074 mm.
Fine Sand	40	200	.074 to .420 mm.
M Sand	10	40	.420 to 2.00 mm.
Coarse Sand	4	10	2.00 to 4.76 mm.
Gravel (Note 1)	—	—	4.76 mm. to 3"
Cobble	—	—	3" to 6"
Boulder	—	—	> 6"

Note 1: For Visual Identification, NYC Building Code does not distinguish between Fine and Coarse Gravel.

UNIFIED SYSTEMS

GROUP SYMBOLS	Typical Names
GW	Well-graded gravels, gravel - sand mixtures, less than 5% fines.
GP	Poorly-graded gravels, gravel - sand mixtures less than 5% fines.
GM	Silty gravels, gravel - sand - silt mixtures, more than 12% fines.
GC	Clayey gravels, gravel - sand - clay mixtures, more than 12% fines.
SW	Well-graded sands, gravelly sands, less than 5% fines.
SP	Poorly-graded sands, gravelly sands, less than 5% fines.
SM	Silty sands, sand - silt mixtures, more than 12% fines.
SC	Clayey sands, sand - clay mixtures, more than 12% fines.
ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
OL	Organic silts and organic silty clays of low plasticity
MH	Inorganic silt, ceous or diatomaceous fine sandy or silty soils, elastic silts.
CH	Inorganic clays of high plasticity. Fat clays.
OH	Organic clays of medium to high plasticity, organic silts.
PT	Peat and other highly organic soils.

QUANTITATIVE ESTIMATE

Secondary Components	Percentage Range
AND	35 - 50
SOME	20 - 35
LITTLE	10 - 20
TRACE	< 10

GRAIN SIZE ABBREVIATIONS

F = FINE, M = M, C = COARSE
* = PREDOMINANT FRACTION (e.g. F-M*)

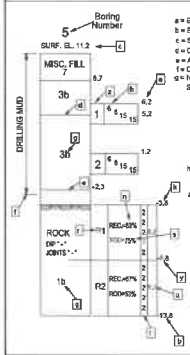
The descriptive size terms in the Boring Logs were arrived at by estimate only, using standard samples for visual comparison.

These tables have been used as an approximate guide, with latitude for interpretation and selective judgement.

EQUIPMENT

Unless otherwise noted:
Type of spoon hammer SAFETY
Weight of casing hammer 300 lbs.
Weight of spoon hammer 140 lbs.
Size of Casing 4.0 Inches,
Size of Sample spoon 2.0 Inches.
Size of Core Bit 2-⅜ Inches.
Type of Core Barrel NQ

BORING LEGEND



a = Elevation, top of sample.
b = Elevation, bottom of boring.
c = Surface elevation.
d = Observed strata boundary and elevation.
e = Approximate strata boundary and elevation.
f = Depth of casing or drilling mud.
g = Numerical Classification, Refers to the N.Y. City Building Code, Sect. 1804.2.1. Table 1804.1.

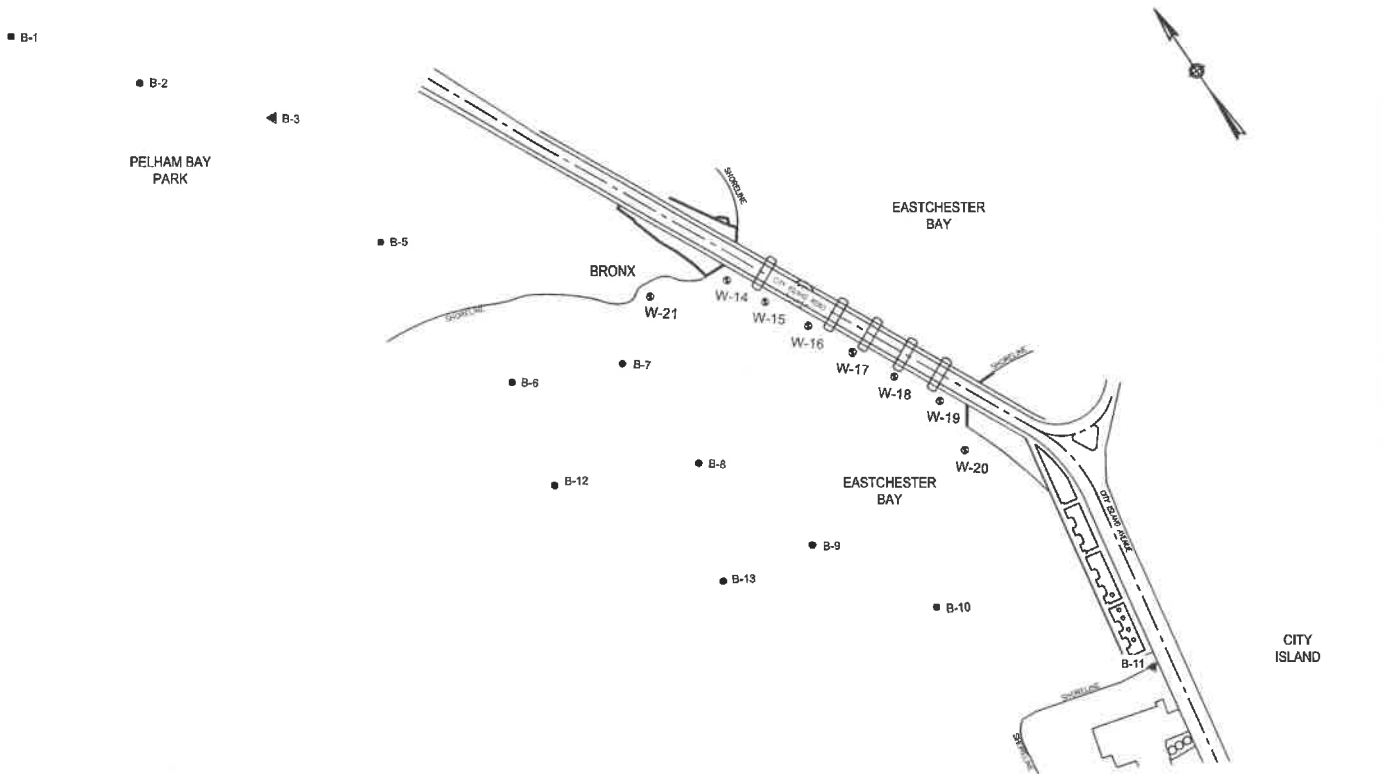
SPOON SAMPLES

Unless otherwise specified, sample spoon was driven 24 inches.
h = Number of Blows required to drive sample spoon for each 6" increment of penetration, with spoon hammer falling 30".
P = Pushed by weight of hammer.
z = Sample Number
or : M = Missed sample,
U = Undisturbed sample,
W = Wash sample,
I = Insufficient recovery of undisturbed sample,

CORE DRILLING

r = Run number.
k = Elevation, at start of core drilling.
y = Elevation, at completion of Run.
n = Percentage of rock core recovered.
s = Percentage of RQD.
t = Coring rate, Minutes/foot
u = Fractures/Foot

DATUM NOTE: All Elevations refer to the Borough of THE BRONX Datum, which is 2.404 Feet above Mean Sea Level at Sandy Hook as established by the U.S. Coast & Geodetic Survey.



LOCATION PLAN
SCALE: 1" = 100'
100 0 100

LEGEND
- TEST BORING
- PREVIOUSLY DONE TEST BORING (see note 2)
- TEST BORING WITH OBSERVATION WELL

NOTE 1: B-4 WAS REMOVED DUE TO ACCESS ISSUES.
NOTE 2: PREVIOUSLY DONE TEST BORINGS ARE REFERENCED FROM RECORD OF BORINGS 3130A DATED MAY 1, 2003.

BORING LOCATIONS AND SHEET INDEX

BORING NO.	LATITUDE	LONGITUDE	BORING TYPE	SHEET NUMBER
B-1	40.857507	73.799583	LAND	2
B-2	40.857291	73.798629	LAND	2
B-3	40.857158	73.797850	LAND	2
B-5	40.855502	73.796824	LAND	2
B-6	40.855749	73.795783	MARINE	3
B-7	40.855901	73.795004	MARINE	3
B-8	40.856417	73.794383	MARINE	3
B-9	40.856037	73.793603	MARINE	4
B-10	4.854767	73.792567	MARINE	4
B-11	40.854661	73.791675	LAND	4
B-12	40.853548	73.795405	MARINE	4
B-13	40.854788	73.794122	MARINE	4

NOTE:
COORDINATE SYSTEM IS REFERENCED TO THE NORTH AMERICAN DATUM OF 1927 (NAD27).

CITY OF NEW YORK
DEPARTMENT OF DESIGN & CONSTRUCTION
DIVISION OF SAFETY AND SITE SUPPORT

3990

PREPARED FOR: BUREAU OF ENVIRONMENTAL AND GEOTECHNICAL SERVICES

CONSULTANT NAME: CDM SMITH
14 WALL STREET, SUITE 1702
NEW YORK, NY 10005

PROJECT NAME: NEW 20" SUB AQUEOUS WATER MAIN TO CITY ISLAND
EASTCHESTER BAY CROSSING (CITY ISLAND BRIDGE)
BOROUGH OF THE BRONX

RECORD OF BORINGS

SEAL & SIGNATURE

DATE: DECEMBER 13, 2012
PROJECT NO: HED-584
DRAWING BY: CONNOR, JANET
CHK BY: RUBIN, AARON, P.E.
DWG No: B-101.00
CADD FILE No: 3990-ROB-01
SHEET 1 OF 4

REVISIONS			
NO.	DATE	DESCRIPTIONS	APP'D

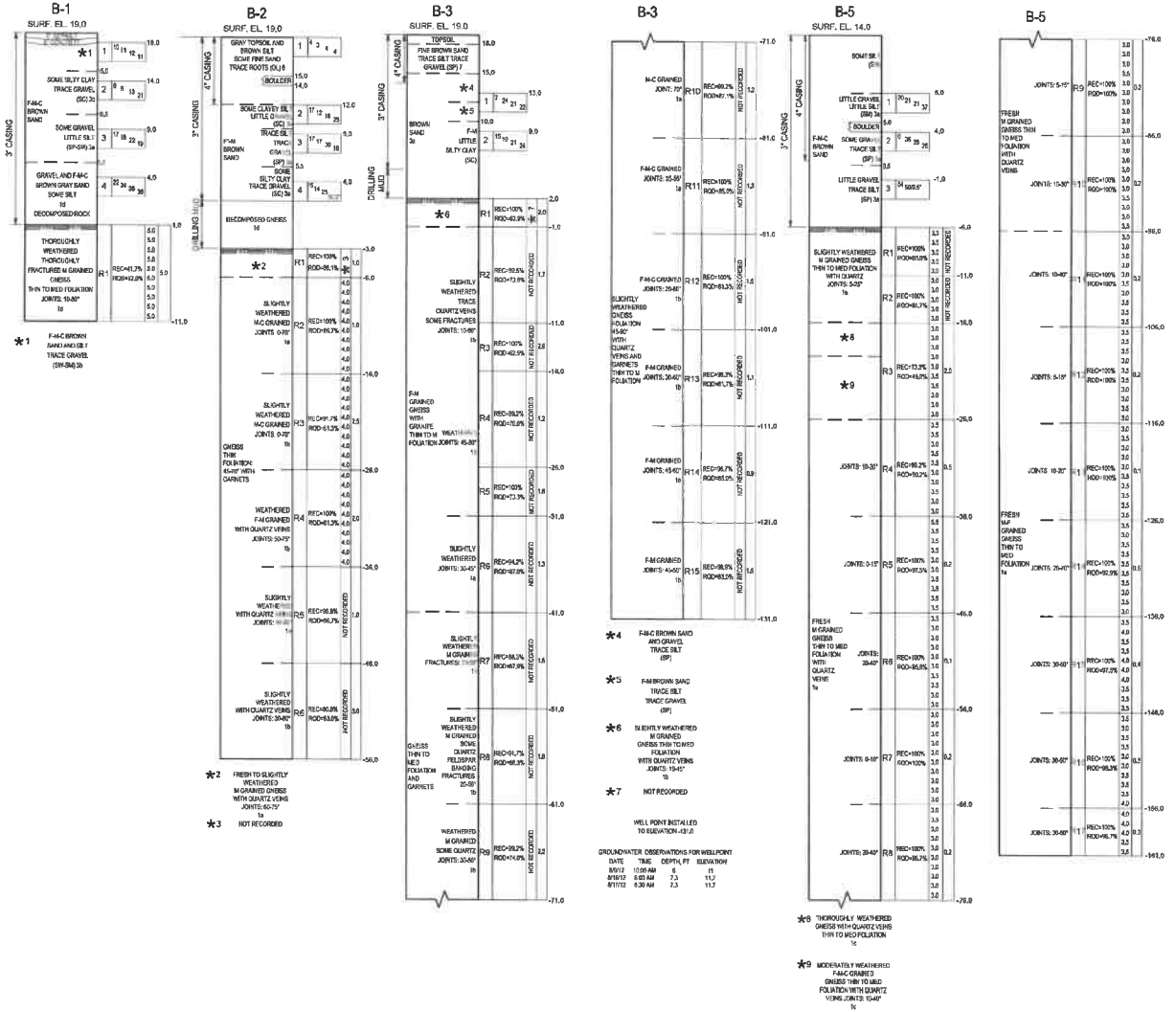
VAJIRKAR, MRUTYUNJAY/ THOMPSON, ANDREW
SOIL AND ROCK ANALYSIS BY

KAPILA PATHIRAGE, PHD, PE
GEOTECHNICAL ENGINEER
CDM SMITH

RICHARD G. MESEROLE
GEOTECHNICAL TEAM LEADER
B.E.G.S.

JEAN M. JEAN-LOUIS
DIRECTOR
B.E.G.S.

MARK A. CANU
ASSOCIATE COMMISSIONER
DIVISION OF SAFETY AND SITE SUPPORT



LABORATORY ANALYSIS OF SOILS *

SAND

BORING NO.	SAMPLE NO.	DEPTH, ft	D100, mm	D60, mm	D30, mm	D10, mm	% GRAVEL (> #4 SIEVE)	% SAND	% SILT OR CLAY (< #200 SIEVE)	WC%	Cc	Cu
B-1	2	5-7	-	0.45	0.07	0.01	2.2	67.4	30.4	19.1	1.02	39.15
B-2	2	7-9	-	0.44	0.12	0.01	14.9	61.7	23.4	10.6	2.52	36.13

* Please refer to detailed laboratory analysis data for additional information regarding the results presented herein.

PACKER TESTING

BORING NO.	TOP ELEVATION	BOTTOM ELEVATION
B-3	-70	-80
	-80	-90
B-5	-61	-71
	-71	-81

"Unauthorized alteration or addition to an engineering drawing bearing a licensed professional engineer's seal is a violation of Article 145, Section 7209, Paragraph 2 of the New York State Education Law."

VAJIRKAR, MRUTYUNJAY/ THOMPSON, ANDREW SOIL AND ROCK ANALYSIS BY	KAPILA PATHIRAGE, PHD, PE GEOTECHNICAL ENGINEER CDM SMITH	RICHARD G. MESSEROLE GEOTECHNICAL TEAM LEADER B.E.G.S.	JEAN M. JEAN-LOUIS DIRECTOR B.E.G.S.	MARK A. CANU ASSOCIATE COMMISSIONER DIVISION OF SAFETY AND SITE SUPPORT

REVISIONS

NO.	DATE	DESCRIPTIONS	APPR'D

CITY OF NEW YORK
DEPARTMENT OF DESIGN & CONSTRUCTION
DIVISION OF SAFETY AND SITE SUPPORT

3990

PREPARED FOR: BUREAU OF ENVIRONMENTAL AND GEOTECHNICAL SERVICES

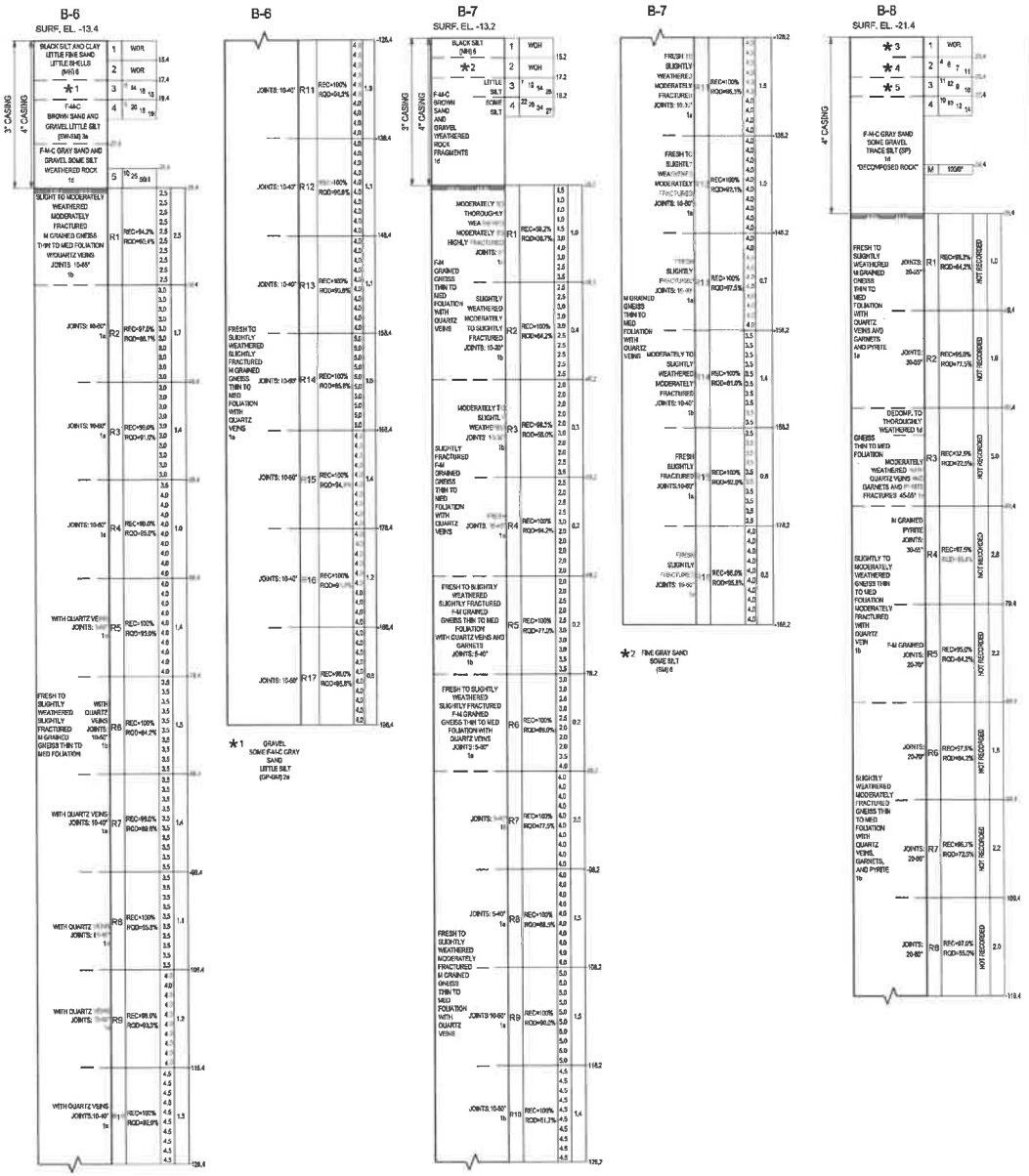
CONSULTANT NAME: CDM SMITH
14 WALL STREET, SUITE 1702
NEW YORK, NY 10005

PROJECT NAME: NEW 20" SUB AQUEOUS WATER MAIN TO CITY ISLAND EASTCHESTER BAY CROSSING (CITY ISLAND BRIDGE) BOROUGH OF THE BRONX

RECORD OF BORINGS

SEAL & SIGNATURE

DATE: DECEMBER 13, 2012
PROJECT NO: HED-564
DRAWING BY: CONNOR, JONATHAN
CHK BY: RUBIN, AARON, P.E.
DWG No: B-102.00
CADD FILE No: 3990-ROB-01
SHEET 2 OF 4



PACKER TESTING

BORING NO.	TOP ELEVATION	BOTTOM ELEVATION
B-6	-79.4	-80.4
	-89.4	-90.4
B-7	-79.2	-80.2
	-89.2	-90.2

NOTE 1: SURFACE ELEVATION INDICATED ON BORINGS 6, 7 AND 8 IS MUDLINE ELEVATION EXTRAPOLATED FROM TIDAL GAUGE INSTALLED BY DDC.

"Unauthorized alteration or addition to an engineering drawing bearing a licensed professional engineer's seal is a violation of Article 145, Section 7209, Paragraph 2 of the New York State Education Law."

CITY OF NEW YORK
DEPARTMENT OF DESIGN & CONSTRUCTION
DIVISION OF SAFETY AND SITE SUPPORT

3990

PREPARED FOR: BUREAU OF ENVIRONMENTAL AND GEOTECHNICAL SERVICES

CONSULTANT NAME: CDM SMITH
14 WALL STREET, SUITE 1702
NEW YORK, NY 10005

PROJECT NAME: NEW 20" SUB AQUEOUS WATER MAIN TO CITY ISLAND
EASTCHESTER BAY CROSSING (CITY ISLAND BRIDGE)
BOROUGH OF THE BRONX

RECORD OF BORINGS

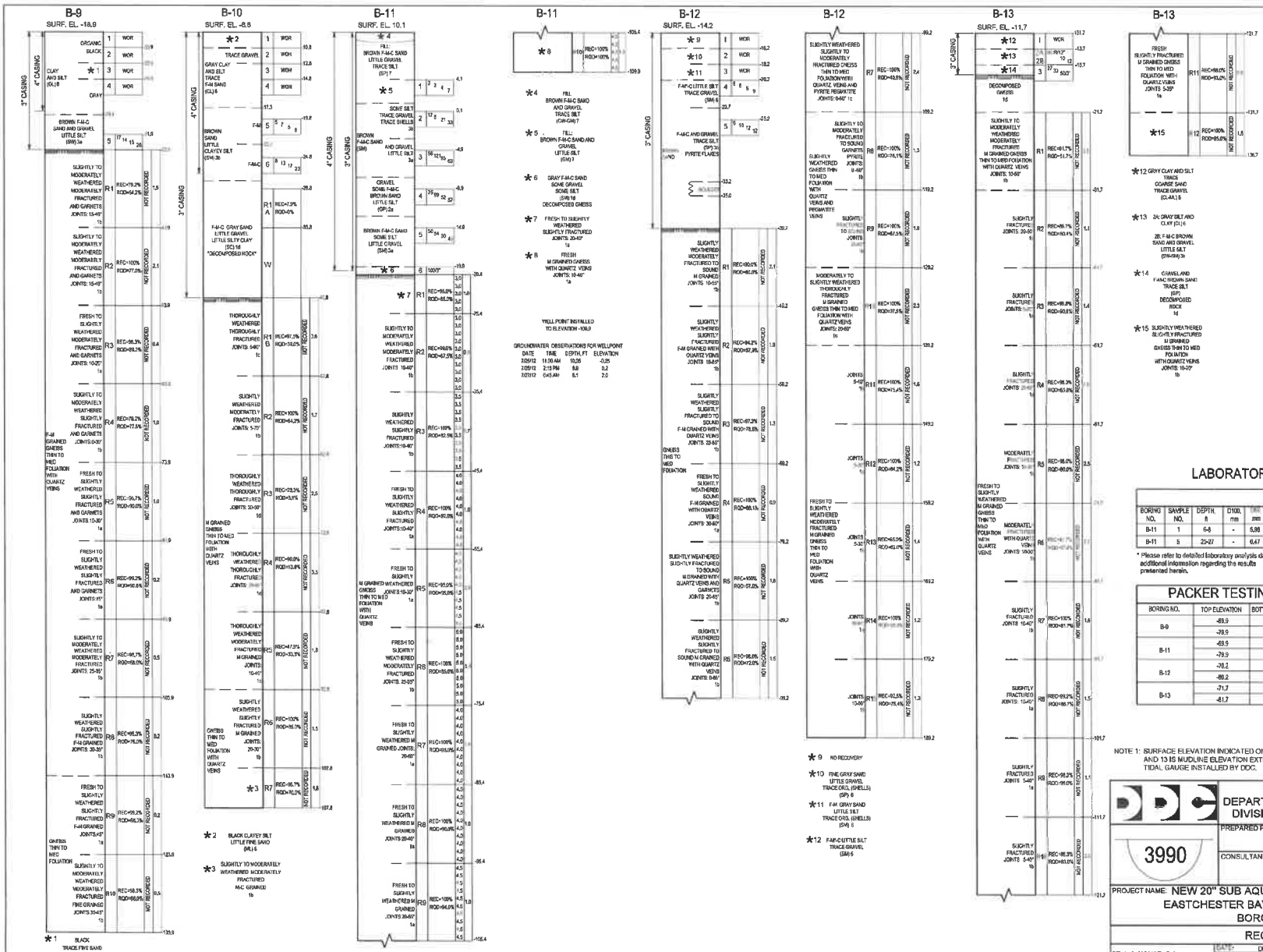
SEAL & SIGNATURE

DATE: DECEMBER 13, 2012
PROJECT NO: HED-584
DRAWING BY: CONNOR, JANET
CHK BY: RUBIN, AARON, P.E.
DWG No: B-103.00
CADD FILE No: 3990-ROB-01
SHEET 3 OF 4

VAJIRKAR, MRUTYUNJAY/ THOMPSON, ANDREW	KAPILA PATHIRAGE, PHD, PE	RICHARD G. MESSEROLE	JEAN M. JEAN-LOUIS	MARK A. CANU
SOIL AND ROCK ANALYSIS BY	GEOTECHNICAL ENGINEER CDM SMITH	GEOTECHNICAL TEAM LEADER B.E.G.S.	DIRECTOR B.E.G.S.	ASSOCIATE COMMISSIONER DIVISION OF SAFETY AND SITE SUPPORT

REVISIONS

NO.	DATE	DESCRIPTIONS	APPR'D



LABORATORY ANALYSIS OF SOILS *

SAND

BORING NO.	SAMPLE NO.	DEPTH, ft	D100, mm	D60, mm	D30, mm	D10, mm	% GRAVEL (> #4 SIEVE)	% SAND	% SILT OR CLAY (< #200 SIEVE)	WC%	Cc	Cu
B-11	1	6-8	-	5.98	0.58	-	44.8	42.4	12.8	27.8	-	-
B-11	5	25-27	-	6.47	0.13	0.01	15.6	62.6	21.8	12.7	2.89	37.22

* Please refer to detailed laboratory analysis data for additional information regarding the results presented herein.

PACKER TESTING

BORING NO.	TOP ELEVATION	BOTTOM ELEVATION
B-9	-69.9	-79.9
	-79.9	-89.9
B-11	-69.9	-79.9
	-79.9	-89.9
B-12	-70.2	-80.2
	-80.2	-90.2
B-13	-71.7	-81.7
	-81.7	-91.7

NOTE 1: SURFACE ELEVATION INDICATED ON BORINGS 9, 10, 12, AND 13 IS MUDLINE ELEVATION EXTRAPOLATED FROM TIDAL GAUGE INSTALLED BY DDC.

"Unauthorized alteration or addition to an engineering drawing bearing a licensed professional engineer's seal is a violation of Article 145, Section 7209, Paragraph 2 of the New York State Education Law."

CITY OF NEW YORK
DEPARTMENT OF DESIGN & CONSTRUCTION
DIVISION OF SAFETY AND SITE SUPPORT

3990

PREPARED FOR: BUREAU OF ENVIRONMENTAL AND GEOTECHNICAL SERVICES

CONSULTANT NAME: CDM SMITH
14 WALL STREET, SUITE 1702
NEW YORK, NY 10005

PROJECT NAME: NEW 20" SUB AQUEOUS WATER MAIN TO CITY ISLAND
EASTCHESTER BAY CROSSING (CITY ISLAND BRIDGE)
BOROUGH OF THE BRONX

RECORD OF BORINGS

SEAL & SIGNATURE

DATE: DECEMBER 13, 2012
PROJECT NO: HED-554
DRAWING BY: CONNOR, JANET
CHK BY: RUBIN, AARON, P.E.
DWG No: B-104.00
CADD FILE No: 3990-ROB-01
SHEET 4 OF 4

NO.	DATE	REVISIONS DESCRIPTIONS	APP'D

VAJIRKAR, MRUTYUNJAY/ THOMPSON, ANDREW
SOIL AND ROCK ANALYSIS BY

KAPILA PATHIRAGE, PHD, PE
GEOTECHNICAL ENGINEER
CDM SMITH

RICHARD G. MESEROLE
GEOTECHNICAL TEAM LEADER
B.E.G.S.

JEAN M. JEAN-LOUIS
DIRECTOR
B.E.G.S.

MARK A. CANU
ASSOCIATE COMMISSIONER
DIVISION OF SAFETY AND SITE SUPPORT

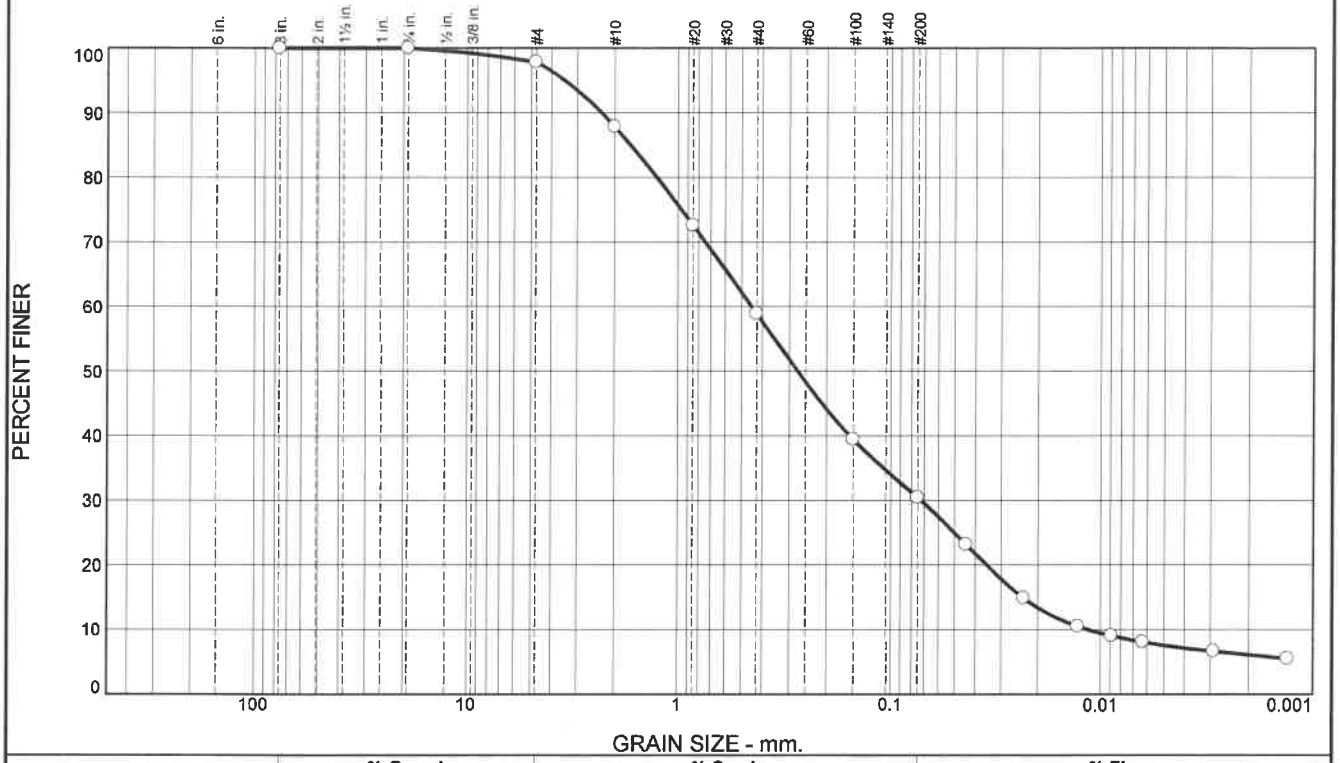
APPENDIX B

Geotechnical Laboratory Test Results, September 2012

Summary of Soil and Rock Testing				
Boring Number	Sample Number	Test Depth (ft)	Test Elevation (ft)	Tests Performed
B-1	S-2	5-7	14.0 to 16.0	Sieve
B-1	S-3	10-12	9.0 to 11.0	Visual Classification
B-1	Run R1	22	-3.0	Split Tensile, UCS, CERCHAR
B-2	S-2	7-9	12.0	Sieve and Hydrometer
B-2	S-3	15-17	4.0 to 6.0	Visual Classification
B-2	Run R4	49	-30.0	Split Tensile, UCS, CERCHAR
B-2	Run R5	61	-42.0	Split Tensile, UCS, CERCHAR, Petrograph
B-3	S-2	10-12	9.0 to 11.0	Visual Classification
B-3	Run R10	91	-72.0	Split Tensile, UCS, CERCHAR
B-3	Run R10	99	-80.0	Split Tensile, UCS, CERCHAR
B-3	Run R11	105	-86.0	Split Tensile, UCS, CERCHAR, Petrograph
B-5	S-1	6-8	8.0 to 10.0	Visual Classification
B-5	Run R9	90	-76.0	Split Tensile, UCS, CERCHAR
B-5	Run R9	98	-84.0	Split Tensile, UCS
B-5	Run R10	102	-88.0	Split Tensile, UCS
B-5	Run R10	109	-95.0	Split Tensile, UCS
B-5	Run R16	164	-150.0	Split Tensile, UCS, CERCHAR, Petrograph
B-5	Run R17	174	-160.0	Split Tensile, UCS, CERCHAR
B-6	S-3	4-6	-17.4 to -19.4	Visual Classification
B-6	Run R5	58	-71.4	Split Tensile, UCS, CERCHAR
B-6	Run R6	67	-80.4	Split Tensile, UCS, CERCHAR
B-6	Run R6	73	-86.4	Split Tensile, UCS
B-6	Run R7	78	-91.4	Split Tensile, UCS, CERCHAR
B-6	Run R14	150	-163.4	Split Tensile, UCS, CERCHAR, Petrograph
B-6	Run R15	158	-171.4	Split Tensile, UCS
B-7	S-2	2-4	-15.2 to -17.2	Visual Classification
B-7	Run R5	62	-75.2	Split Tensile, UCS, CERCHAR
B-7	Run R-6	68	-81.2	Split Tensile, UCS
B-7	Run R-6	69	-82.2	Split Tensile, UCS, CERCHAR
B-7	Run R7	83	-96.2	Split Tensile, UCS, CERCHAR
B-7	Run R14	154	-167.2	Split Tensile, UCS, CERCHAR, Petrograph
B-7	Run R15	156	-169.2	Split Tensile, UCS, CERCHAR
B-8	S-3	4-6	-25.4 to -27.4	Visual Classification
B-8	Run 4	56	-77.4	Split Tensile, UCS, CERCHAR
B-8	Run 5	61	-82.4	Split Tensile, UCS, CERCHAR
B-8	Run 5	61	-82.4	Split Tensile, UCS
B-8	Run 6	78	-99.4	Split Tensile, UCS, CERCHAR
B-8	Run 11	126	-147.4	Split Tensile, UCS, CERCHAR, Petrograph
B-8	Run 12	128	-149.4	Split Tensile, UCS
B-9	S-2	2-4	-20.9 to -22.9	Visual Classification
B-9	Run R4	50	-68.9	Split Tensile, UCS, CERCHAR
B-9	Run R5	62	-80.9	Split Tensile, UCS, CERCHAR
B-9	Run R5	63	-81.9	Split Tensile, UCS
B-9	Run R6	71	-89.9	Split Tensile, UCS
B-9	Run R6	72	-90.9	Split Tensile, UCS, CERCHAR
B-9	Run R10	106	-124.9	Split Tensile, UCS, CERCHAR, Petrograph
B-10	S-4	6-8	-14.8 to -16.8	Visual-Manual
B-10	Run R2	54	-62.8	Split Tensile, UCS, CERCHAR, Petrograph
B-10	Run R4	70	-78.8	Split Tensile, UCS
B-10	Run R4	70	-78.8	Split Tensile, UCS
B-10	Run R5	84	-92.8	Split Tensile, UCS, CERCHAR
B-11	S-1	6-8	4.1-6.1	Sieve
B-11	S-5	25-27	-14.9 to -16.9	Sieve and Hydrometer
B-11	Run R2	36	-25.9	Split Tensile, UCS

Boring Number	Sample Number	Test Depth (ft)	Test Elevation (ft)	Tests Performed
B-11	Run R3	46	-35.9	Split Tensile, UCS
B-11	Run R4	63	-52.9	Split Tensile, UCS
B-11	Run R6	79	-68.9	CERCHAR
B-11	Run R6	80	-69.9	Split Tensile, UCS, CERCHAR
B-11	Run R6	87	-76.9	CERCHAR
B-11	Run R7	88	-77.9	Split Tensile, UCS, CERCHAR
B-11	Run R8	97	-86.9	CERCHAR
B-11	Run R8	97	-86.9	Split Tensile, UCS, CERCHAR
B-12	S-5	11-13	-25.2 to -27.2	Visual Classification
B-12	Run R4	56	-70.2	Split Tensile, UCS, CERCHAR
B-12	Run R5	70	-84.2	Split Tensile, UCS
B-12	Run R5	73	-87.2	Split Tensile, UCS
B-12	Run R13	151	-159.2	Split Tensile, UCS, Petrograph
B-12	Run R13	152	-159.2	CERCHAR
B-13	S-2B	2-4	-13.7 to -15.7	Visual Classification
B-13	Run R6	60	-71.7	Split Tensile, UCS, CERCHAR
B-13	Run R6	64	-75.7	Split Tensile, UCS, CERCHAR
B-13	Run R7	72	-83.7	Split Tensile, UCS, CERCHAR
B-13	Run R7	73	-84.7	Split Tensile, UCS
B-13	Run R7	74	-85.7	CERCHAR
B-13	Run R7	76	-87.7	CERCHAR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.2	10.0	28.9	28.5	22.8	7.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	100.0		
#4	97.8		
#10	87.8		
#20	72.6		
#40	58.9		
#100	39.4		
#200	30.4		

* (no specification provided)

Material Description

Clayey sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 2.3136 D_{85}= 1.6782 D_{60}= 0.4493
D_{50}= 0.2734 D_{30}= 0.0725 D_{15}= 0.0236
D_{10}= 0.0115 C_u= 39.15 C_c= 1.02

Classification

USCS= SC AASHTO=

Remarks

As received moisture content=18.3%
Soil classification and description based on
Visual Manual Procedure ASTM D2488

Source of Sample: B-1 **Depth:** 5-7
Sample Number: S-2

Date: 7/27/2012

CDM Smith

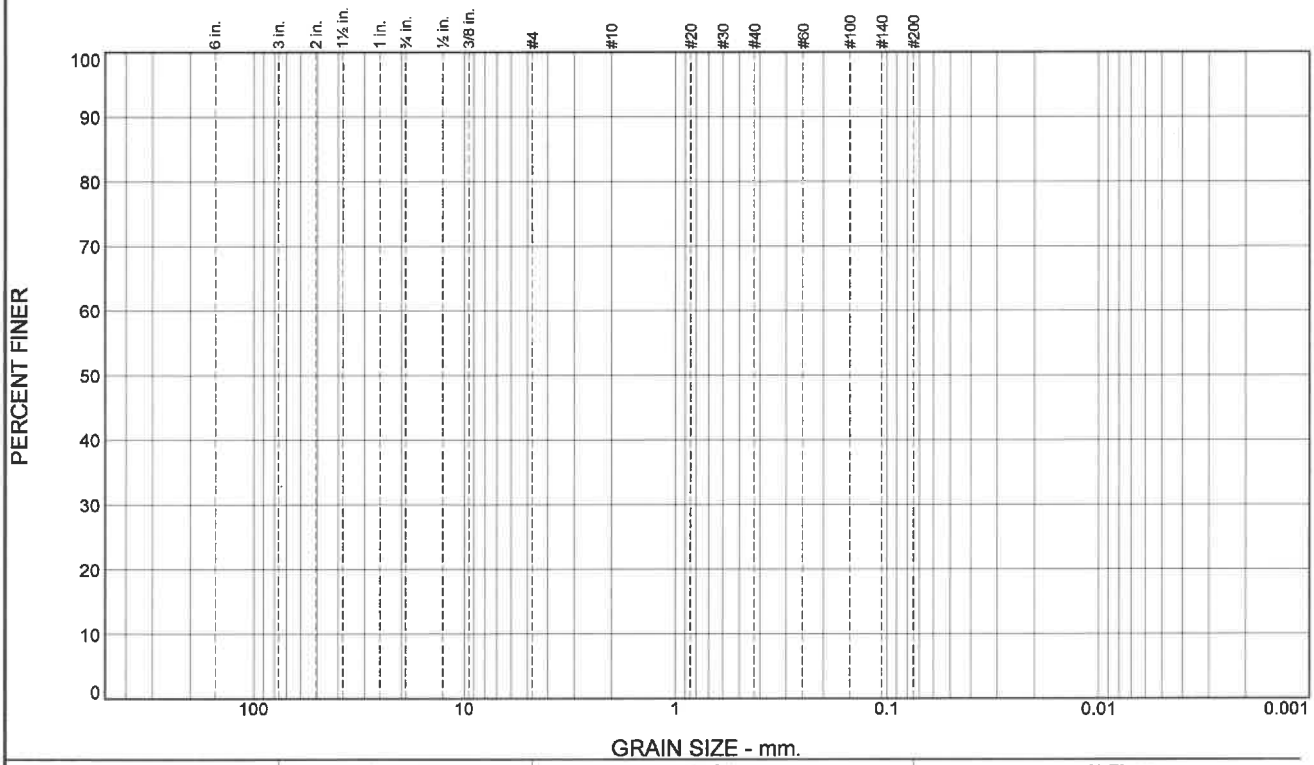
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)

* (no specification provided)

Material Description

Poorly graded sand with silt and gravel
Moist

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SP-SM AASHTO=

Remarks

Soil classification and description based on Visual Manual Procedure ASTM D2488

Source of Sample: B-1 **Depth:** 10-12
Sample Number: S-3

Date: 7/27/2012

CDM Smith

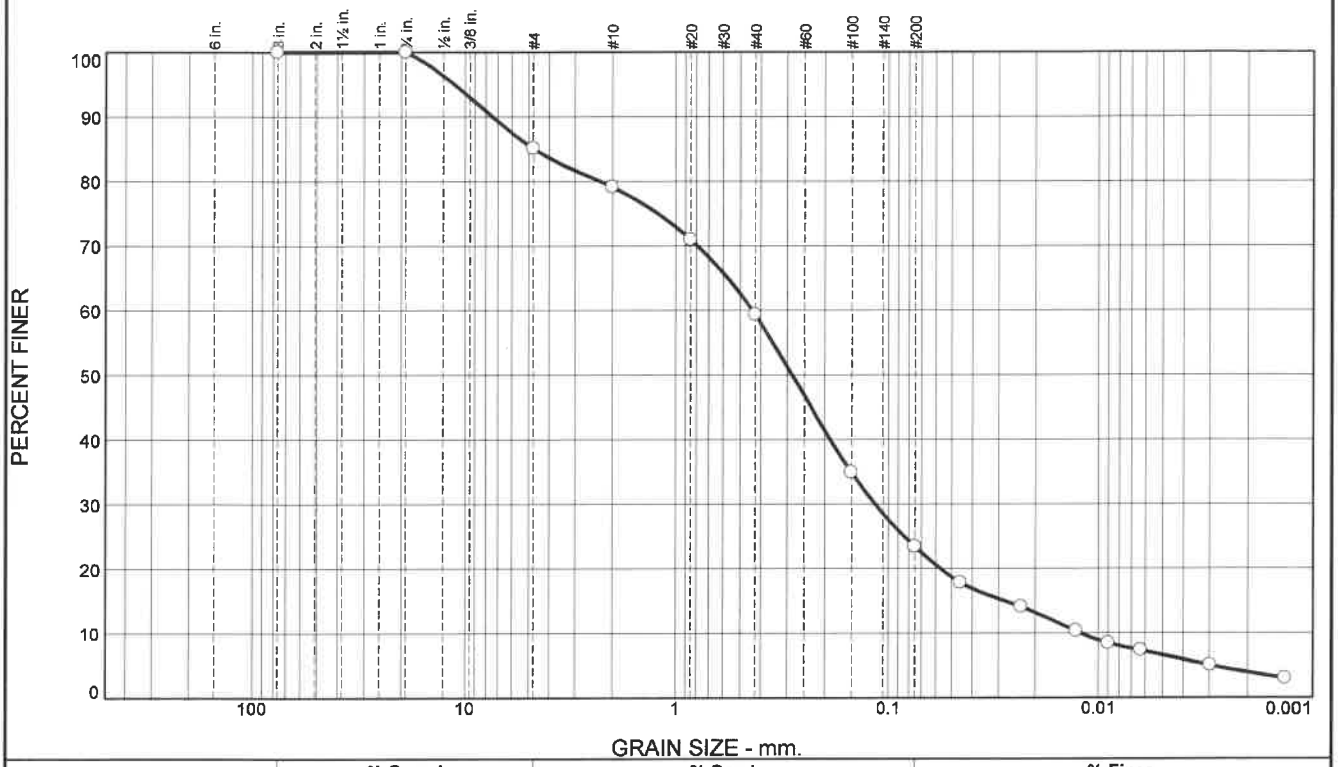
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	14.9	6.0	19.8	35.9	16.8	6.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	100.0		
#4	85.1		
#10	79.1		
#20	70.9		
#40	59.3		
#100	34.9		
#200	23.4		

* (no specification provided)

Material Description

Clayey sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 7.4292 D_{85}= 4.7004 D_{60}= 0.4392
D_{50}= 0.2847 D_{30}= 0.1160 D_{15}= 0.0281
D_{10}= 0.0122 C_u= 36.13 C_c= 2.52

Classification

USCS= SC AASHTO=

Remarks

As received moisture content=10.9%
Soil classification and description based on
Visual Manual Procedure ASTM D2488

Source of Sample: B-2 **Depth:** 7-9
Sample Number: S-2

Date: 8/1/2012

CDM Smith

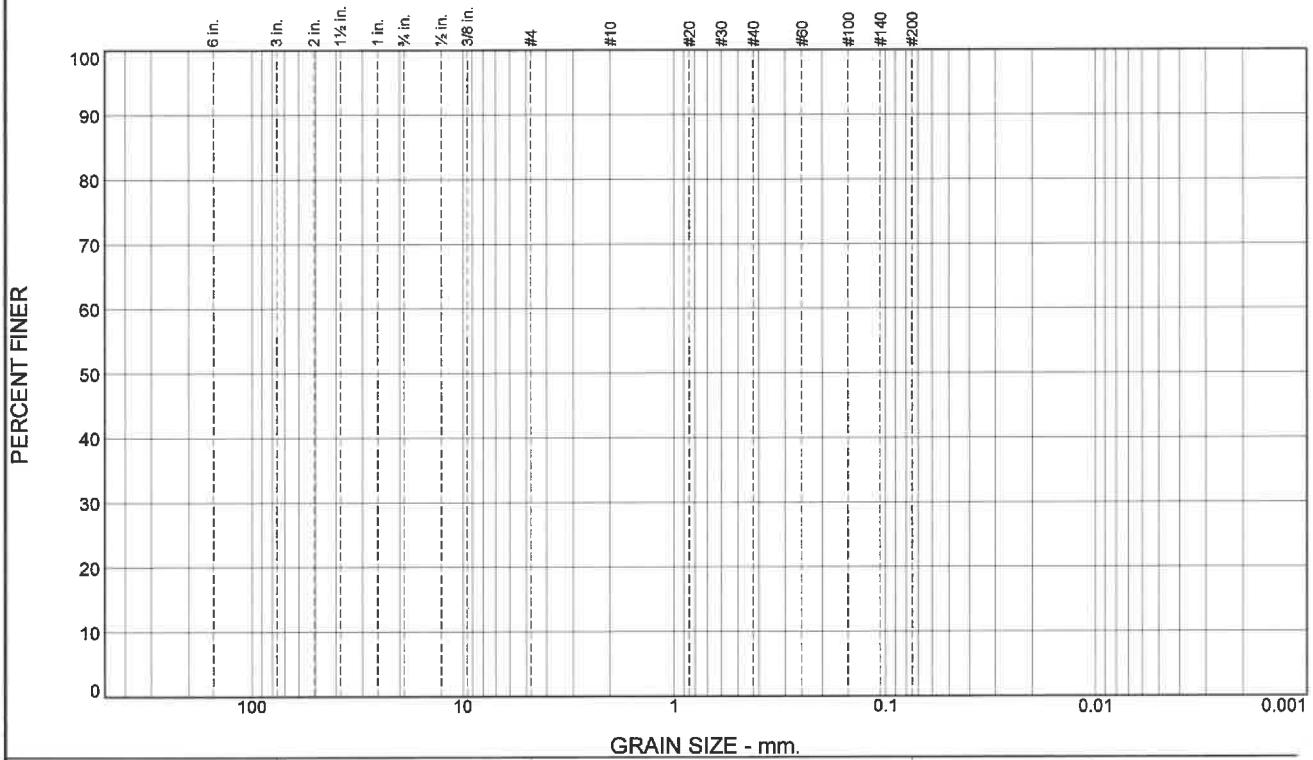
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)

* (no specification provided)

Material Description

Clayey sand
Moist

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO=

Remarks

Soil classification and description based on Visual Manual Procedure ASTM D2488

Source of Sample: B-2 **Depth:** 15-17
Sample Number: S-3

Date: 8/1/2012

CDM Smith

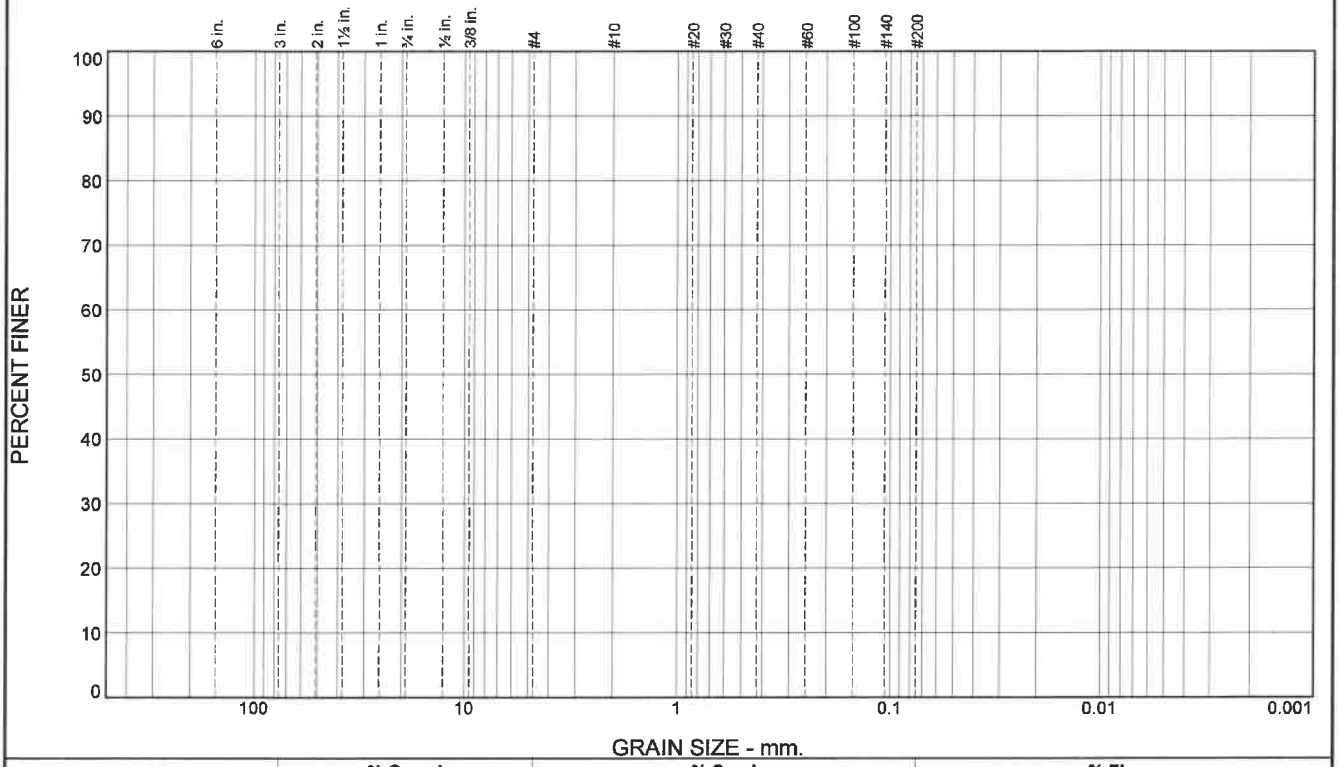
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)

* (no specification provided)

Material Description

Clayey sand
Moist

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO=

Remarks

Soil classification and description based on Visual Manual Procedure ASTM D2488

Source of Sample: B-3 **Depth:** 10-12
Sample Number: S-2

Date: 8/8/2012

CDM Smith

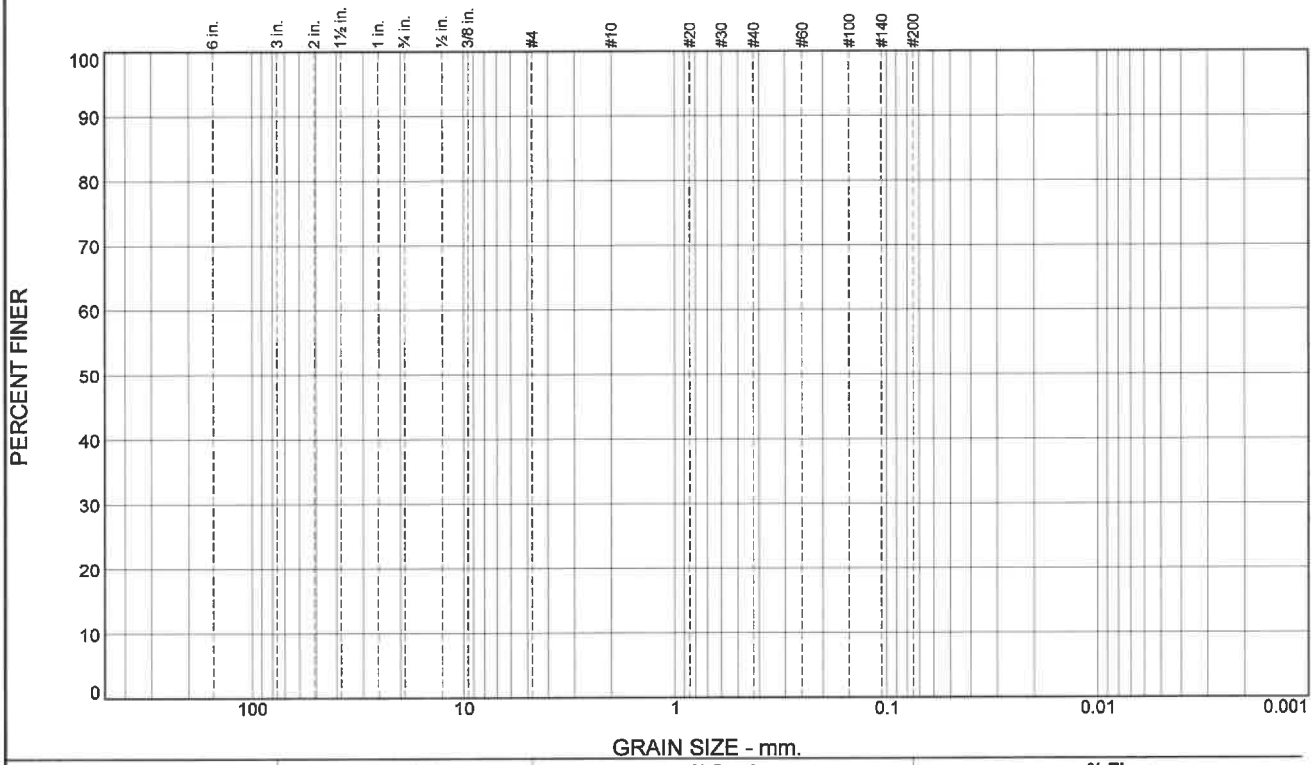
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)

* (no specification provided)

Material Description

Silty sand
Moist

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Soil classification and description based on Visual Manual Procedure ASTM D2488

Source of Sample: B-5 **Depth:** 6-8
Sample Number: S-1

Date: 8/22/2012

CDM Smith

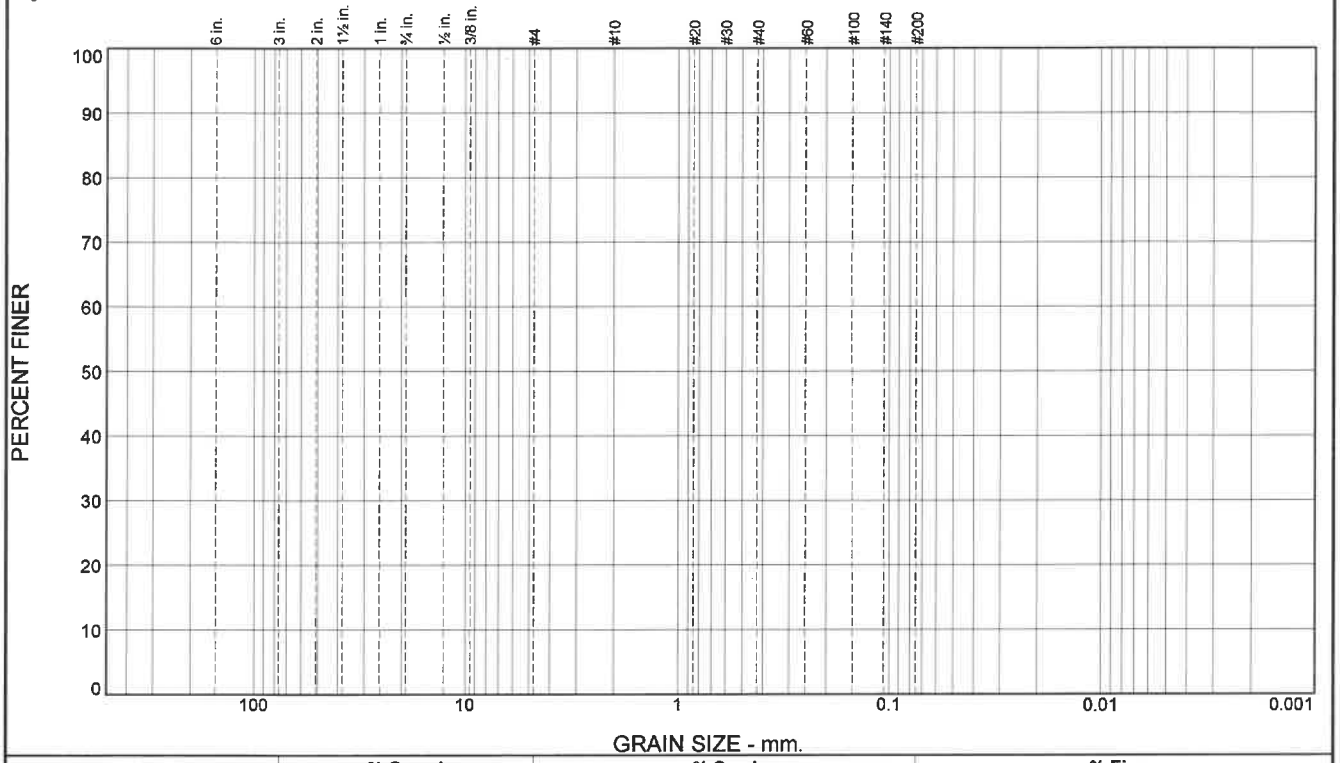
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)

* (no specification provided)

Material Description

Poorly graded gravel with silt and sand
Moist

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= GP-GM AASHTO=

Remarks

Source of Sample: B-6 **Depth:** 4-6
Sample Number: S-3

Date: 7/6/2012

CDM Smith

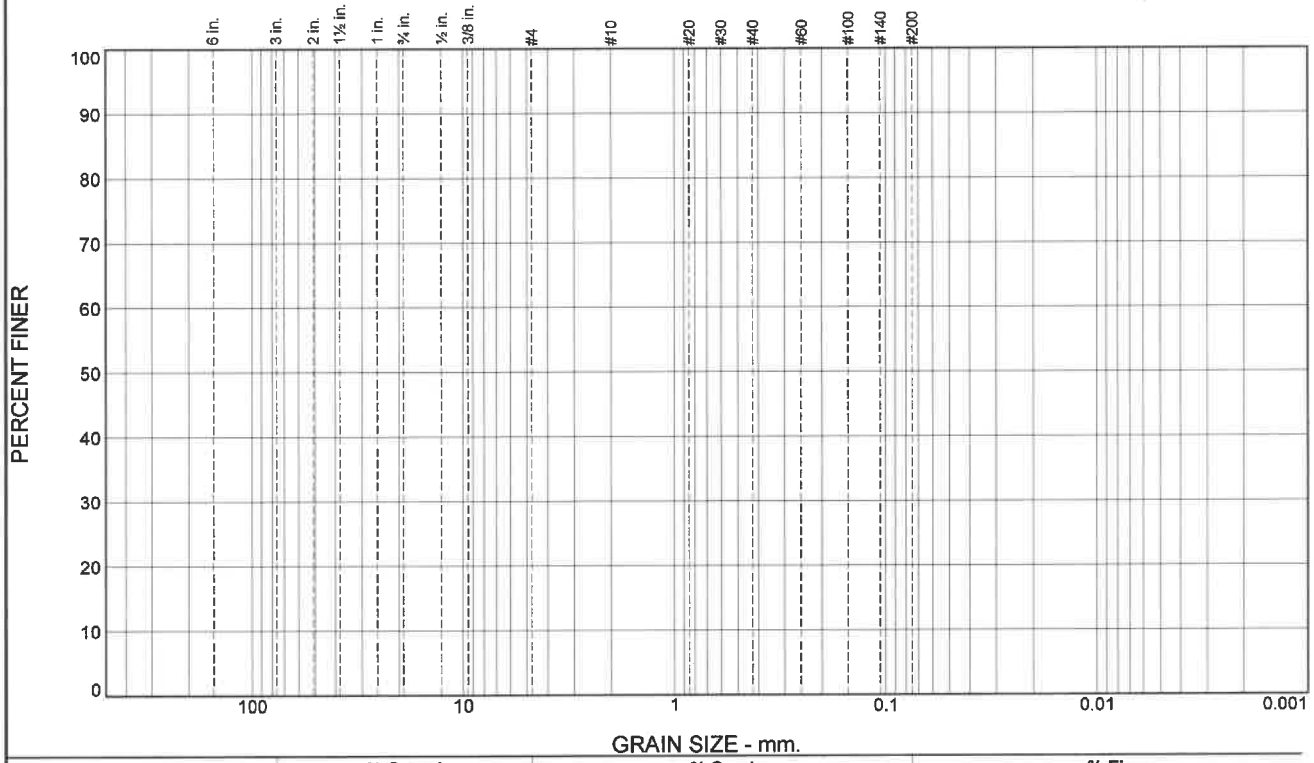
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)

* (no specification provided)

Material Description

Silty sand
Moist
Organic odor

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Soil classification and description based on Visual Manual Procedure ASTM D2488

Source of Sample: B-7 **Depth:** 2-4
Sample Number: S-2

Date: 7/2/2012

CDM Smith

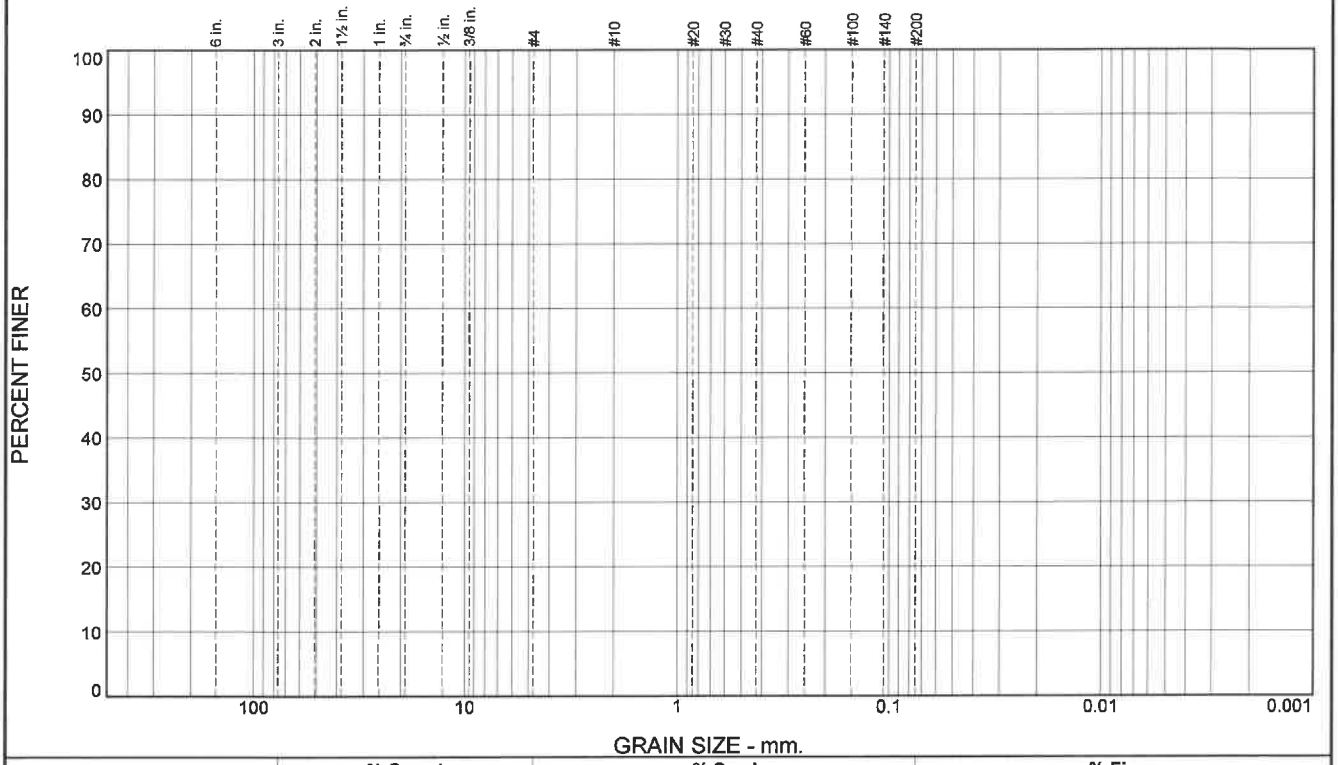
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)

* (no specification provided)

Material Description

Well-graded gravel with silt and sand
Moist
Mica flakes

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= GW-GM AASHTO=

Remarks

Soil description and classification based on Visual Manual Procedure ASTM D2488

Source of Sample: B-8 **Depth:** 4-6
Sample Number: S-3

Date: 6/7/2012

CDM Smith

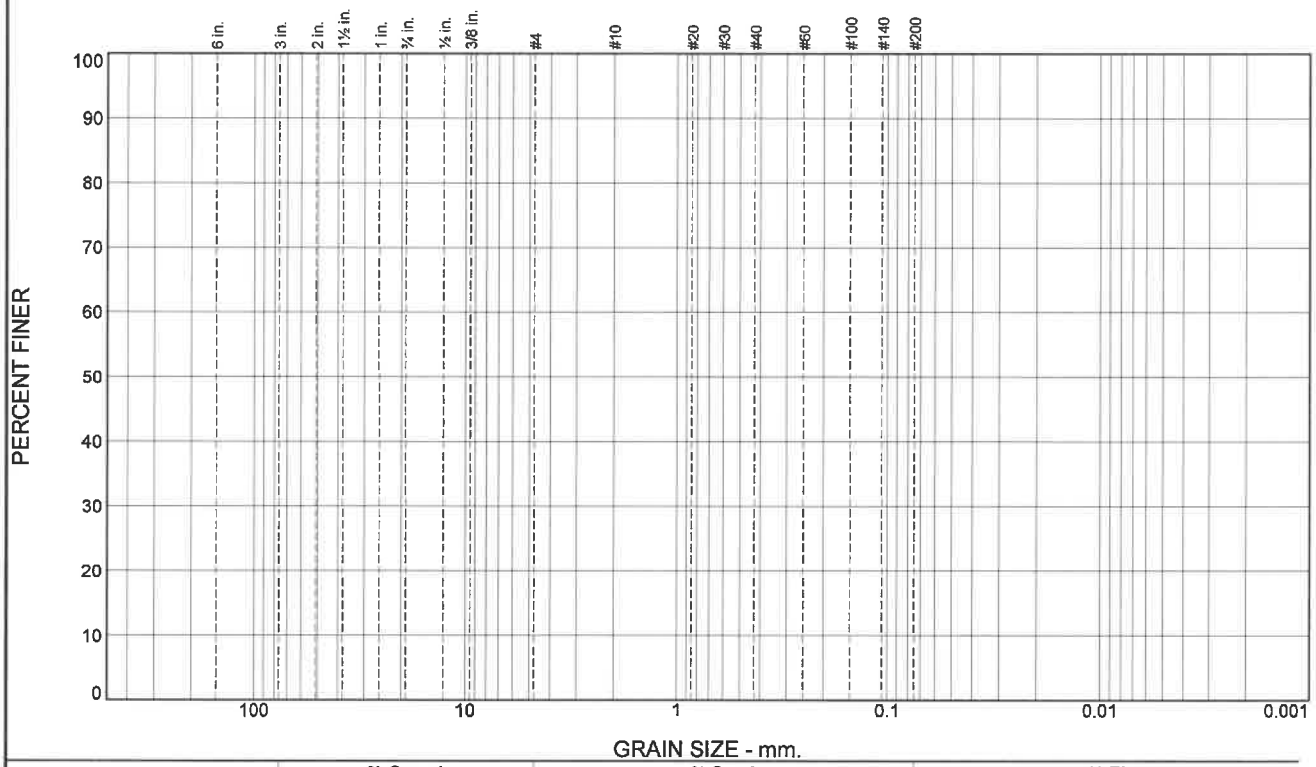
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)

* (no specification provided)

Material Description

Lean Clay
Moist
Black
Organic odor

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

Soil classification and description based on Visual Manual Procedure ASTM D2488

Source of Sample: B-9 **Depth:** 2-4
Sample Number: S-2

Date: 6/26/2012

CDM Smith

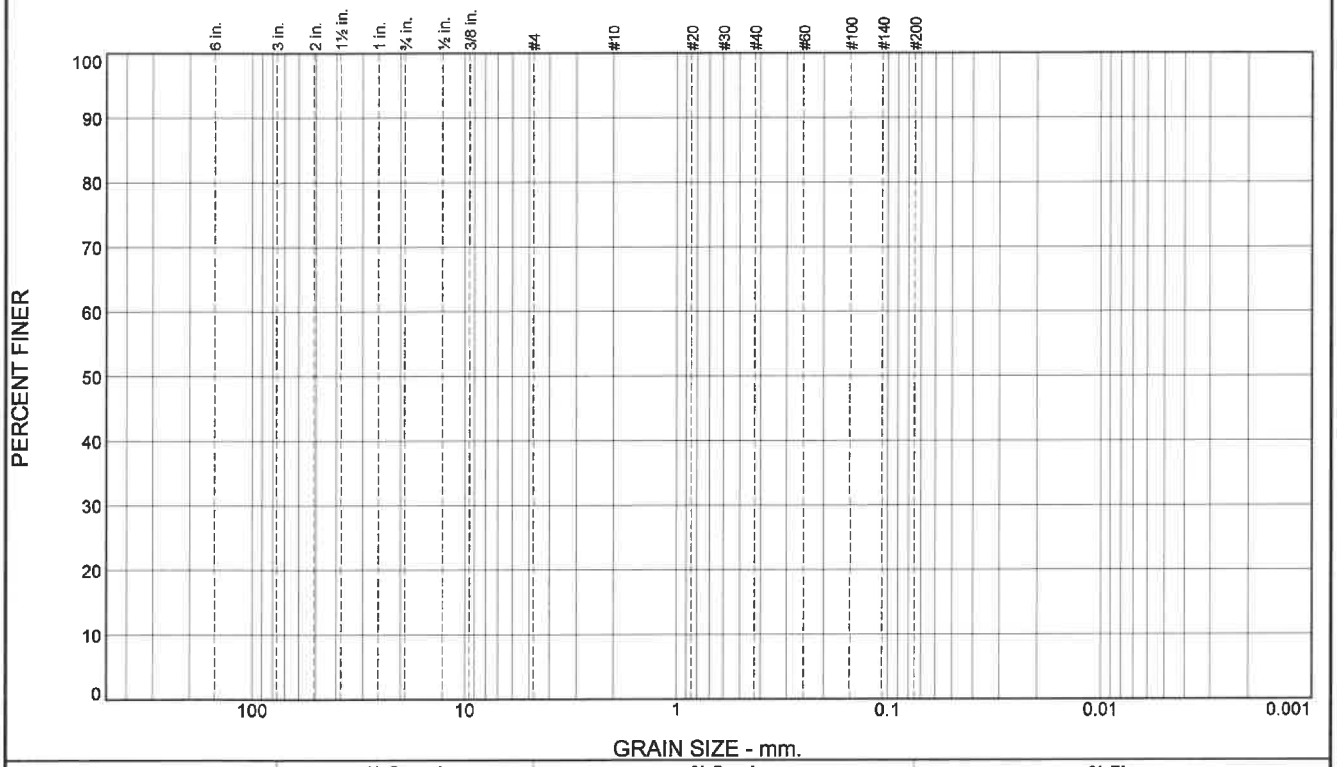
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** AT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)

* (no specification provided)

Material Description

Lean clay with sand
Wet
Black, Organic odor
Shell fragments

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

Soil classification and description based on Visual Manual Procedure ASTM D2488

Source of Sample: B-10 **Depth:** 6-8
Sample Number: S-4

Date: 6/19/2012

CDM Smith

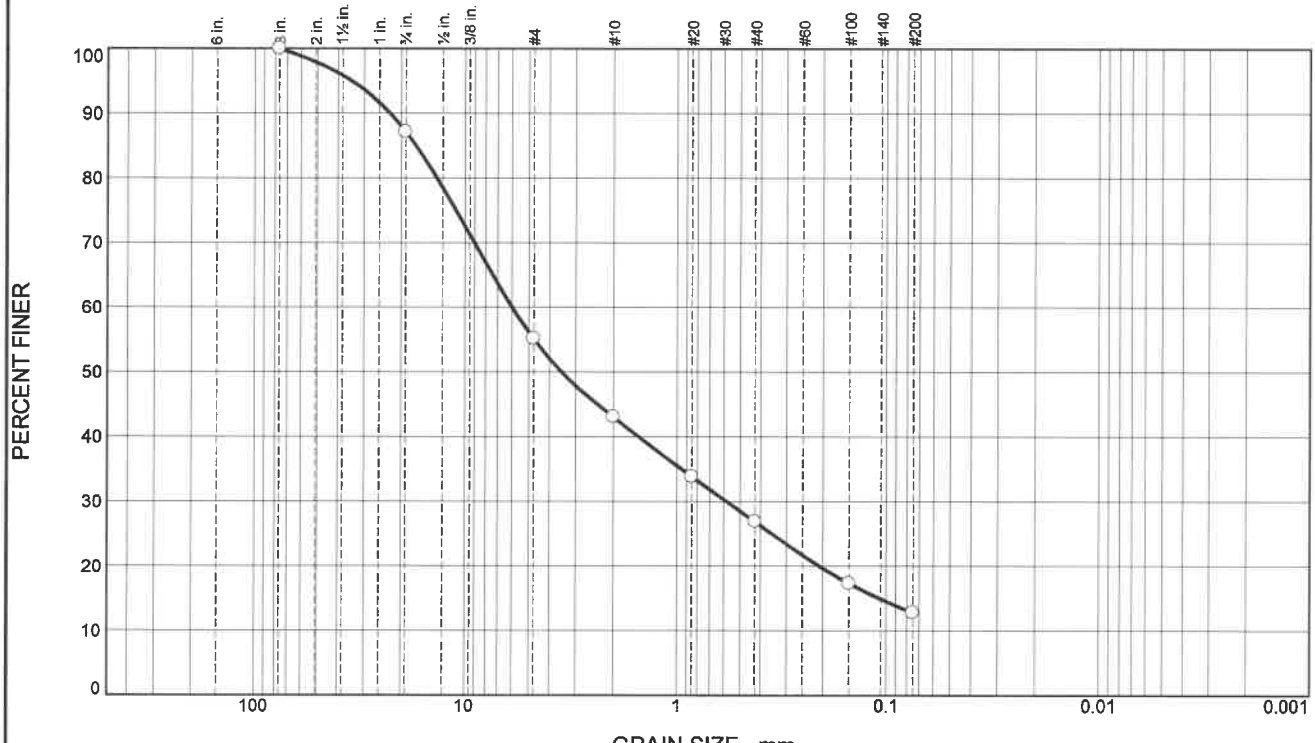
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	12.9	31.9	12.2	16.1	14.1	12.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	87.1		
#4	55.2		
#10	43.0		
#20	33.8		
#40	26.9		
#100	17.3		
#200	12.8		

* (no specification provided)

Material Description

Well-graded gravel with silt and sand
Slag
Ash odor

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 22.6248 D_{85}= 17.0410 D_{60}= 5.9789
D_{50}= 3.4989 D_{30}= 0.5827 D_{15}= 0.1076
D_{10}= C_u= C_c=

Classification

USCS= GW-GM AASHTO=

Remarks

As received moisture content=27.8%
Soil classification and description based on
Visual Manual Procedure ASTM D2488

Source of Sample: B-11 **Depth:** 6-8
Sample Number: S-1

Date: 6/21/2012

CDM Smith

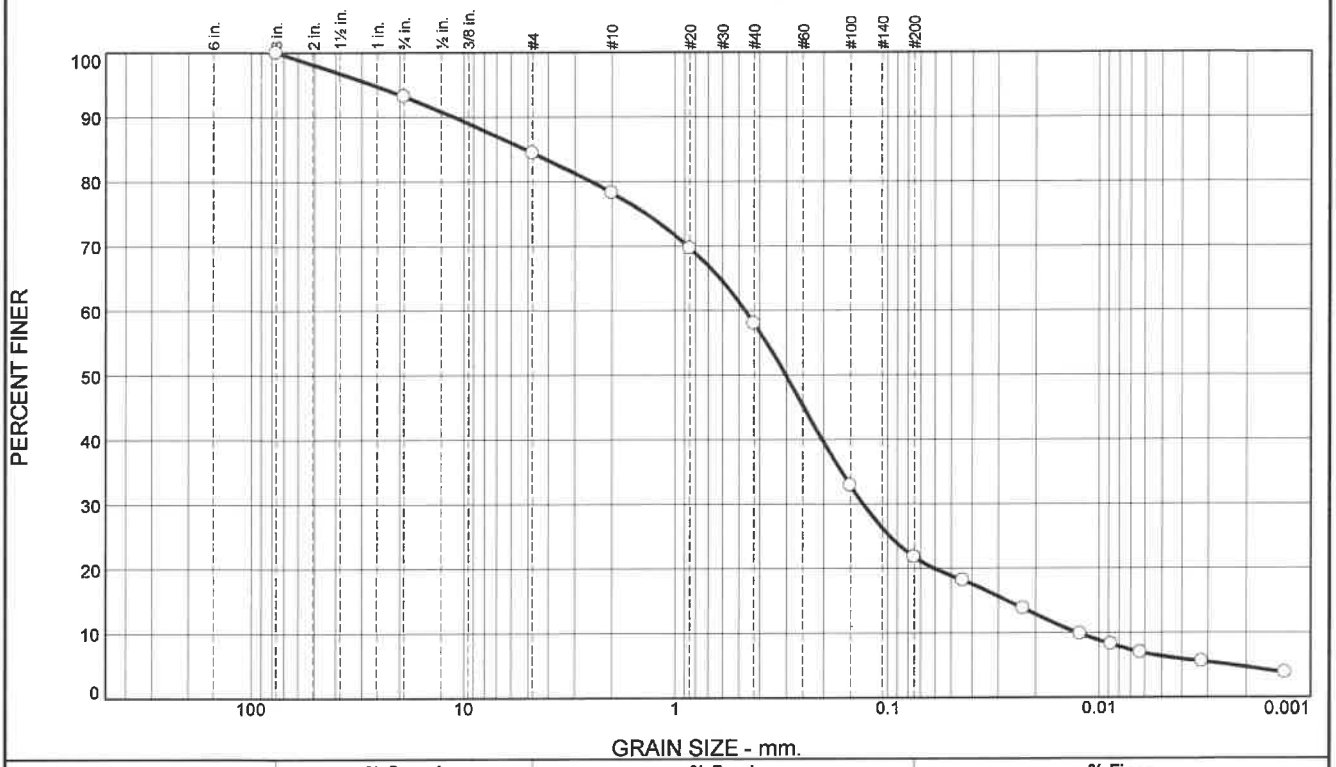
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** AT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.8	8.8	6.2	20.2	36.2	15.5	6.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	93.2		
#4	84.4		
#10	78.2		
#20	69.6		
#40	58.0		
#100	32.9		
#200	21.8		

* (no specification provided)

Material Description

Silty sand with gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 11.1339 D_{85}= 5.1788 D_{60}= 0.4685
D_{50}= 0.3022 D_{30}= 0.1306 D_{15}= 0.0273
D_{10}= 0.0126 C_u= 37.22 C_c= 2.89

Classification

USCS= SM AASHTO=

Remarks

As received moisture content=12.7%
Soil classification and description based on
Visual Manual Procedure ASTM D2488

Source of Sample: B-11 **Depth:** 25-27
Sample Number: S-5

Date: 6/21/2012

CDM Smith

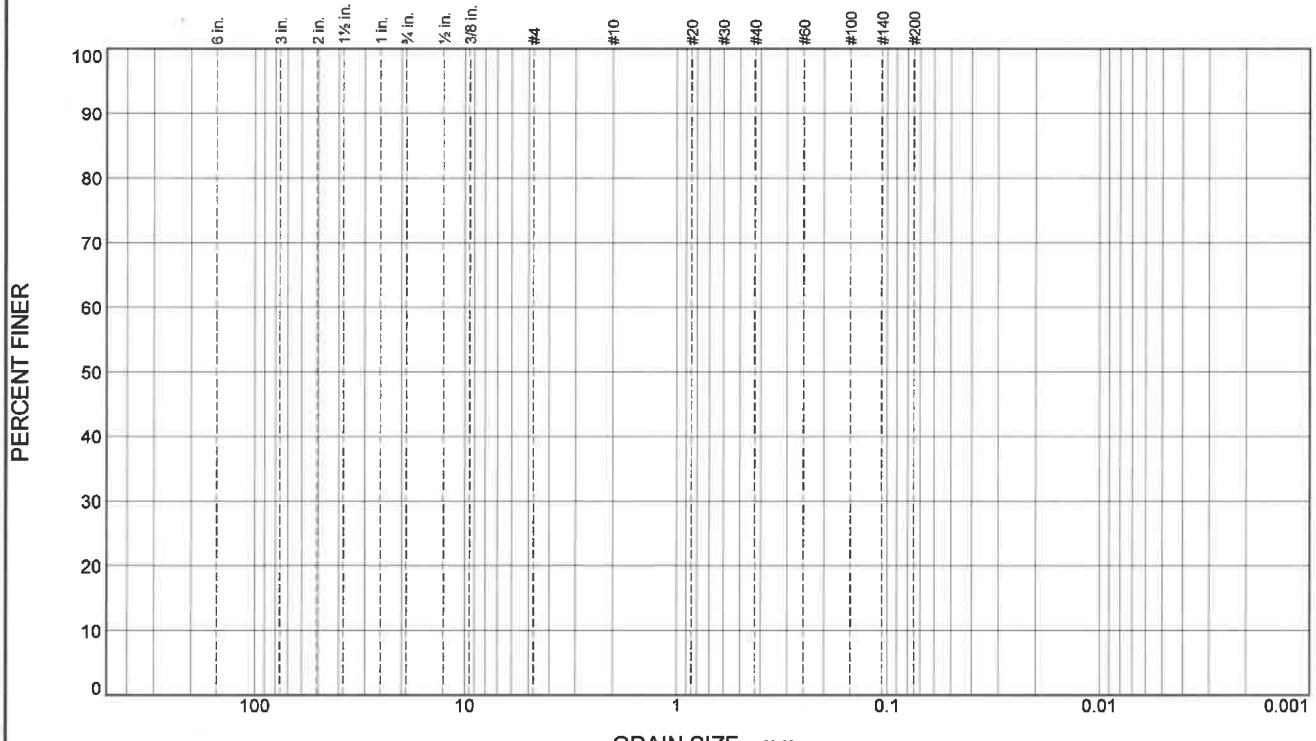
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** AT

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)

* (no specification provided)

Material Description

Well-graded sand with silt and gravel
Moist

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SW-SM AASHTO=

Remarks

Soil classification and description based on Visual Manual Procedure ASTM D2488

Source of Sample: B-12 **Depth:** 11-13
Sample Number: S-5

Date: 6/13/2012

CDM Smith

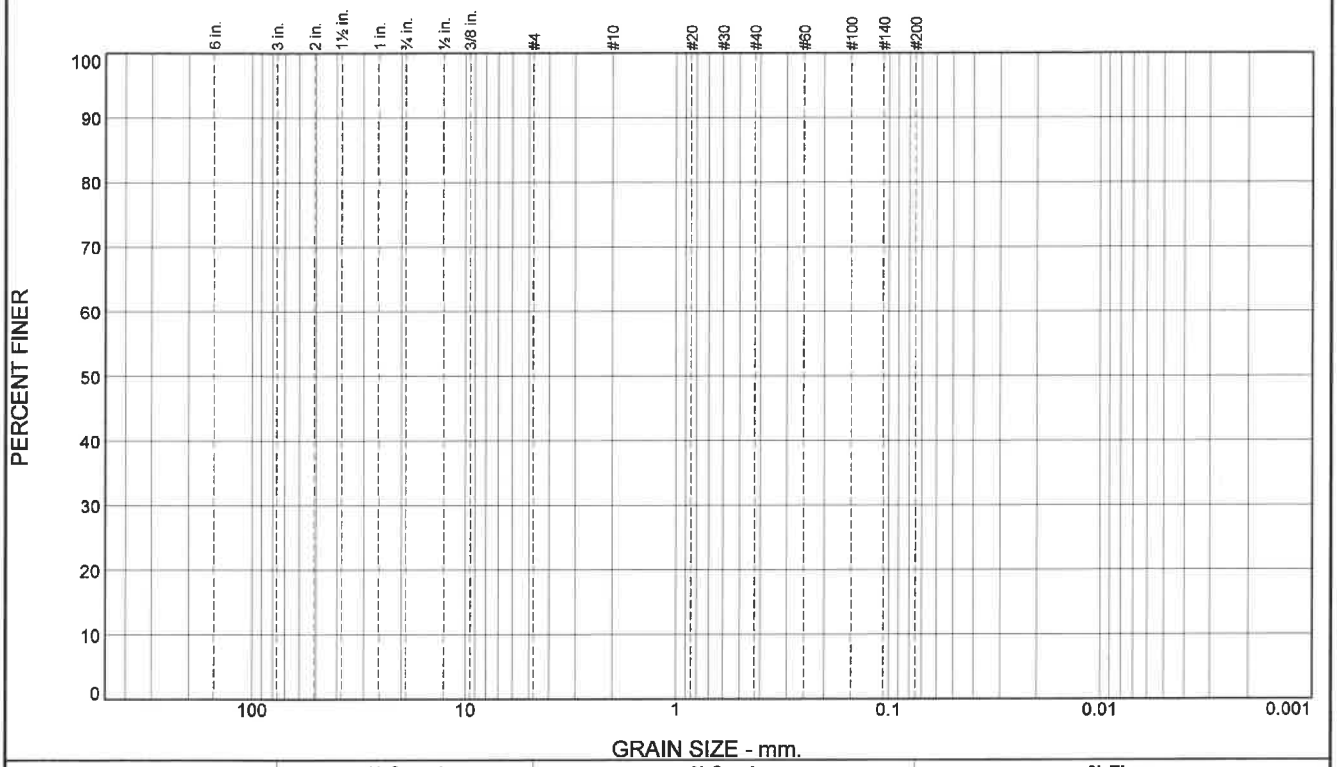
Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)

* (no specification provided)

Material Description

Well-graded sand with silt and gravel
Moist

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SW-SM AASHTO=

Remarks

Soil classification and description based on Visual Manual Procedure ASTM D2488

Source of Sample: B-13 **Depth:** 2-4
Sample Number: S-2B

Date: 6/19/2012

CDM Smith

Cambridge, Massachusetts

Client: New York City DDC
Project: City Island Bridge, Bronx (Task ID #8324)

Project No: 117520.92401 **Figure**

Tested By: NE **Checked By:** MR

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/06/12
Tested By:	bfm
Checked By:	mpd
Sample Type:	Core
Sample Description:	---
Strain Rate:	2.5%/min.

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

Boring ID	Sample ID	Depth, ft.	Test No.	Thickness (L), in.			Diameter (D), in.	Failure Load (P), lb.	Splitting Tensile Strength, psi
B-6	Run R5	55.0-65.0 (58)	ST-37	0.99	0.97	0.96	1.99	3,539	1,170
B-6	Run R6	65.0-75.0 (67)	ST-38	1.08	1.09	1.10	1.99	4,247	1,250
B-6	Run R6	65.0-75.0 (73)	ST-39	1.01	1.00	1.00	1.99	3,964	1,260
B-6	Run R7	75.0-85.0 (78)	ST-40	1.08	1.07	1.06	1.99	3,414	1,020
B-6	Run R14	145.0-155.0 (150)	ST-41	1.02	1.03	1.03	1.99	5,388	1,680
B-6	Run R15	155.0-165.0 (158)	ST-42	1.00	1.00	1.00	2.00	4,147	1,330

GeoTesting EXPRESS

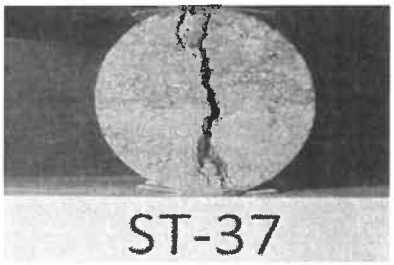
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-6
Run R5
55.0-65.0 (58) ft

ST-37



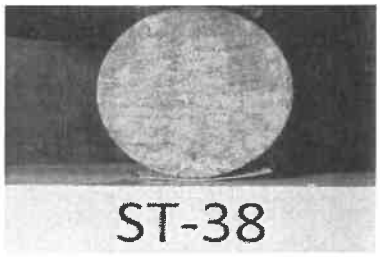


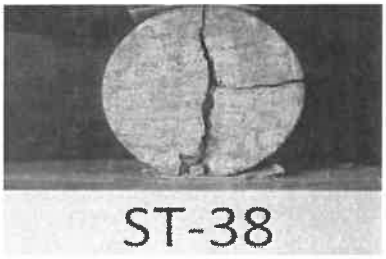
Intact material failure

L/D: 0.5

B-6
Run R6
65.0-75.0 (67) ft

ST-38



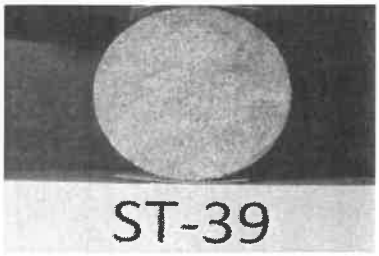


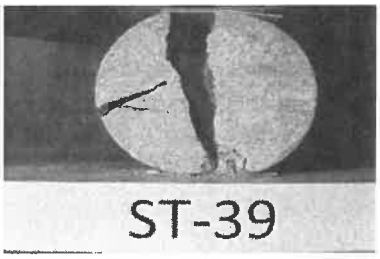
Intact material failure

L/D: 0.5

B-6
Run R6
65.0-75.0 (73) ft

ST-39



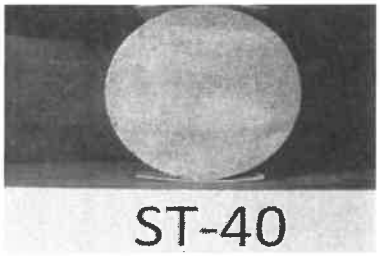


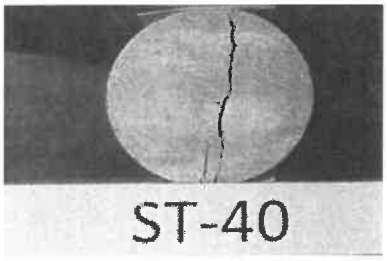
Intact material failure

L/D: 0.5

B-6
Run R7
75.0-85.0 (78) ft

ST-40



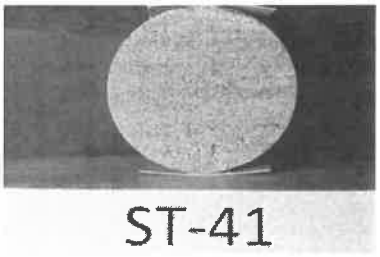


Intact material failure

L/D: 0.5

B-6
Run R14
145.0-155.0 (150) ft

ST-41





Intact material failure

L/D: 0.5

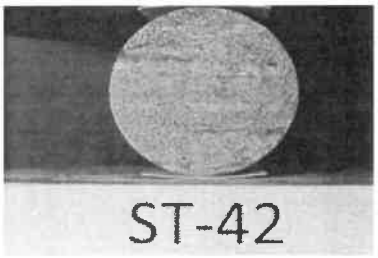
GeoTesting EXPRESS

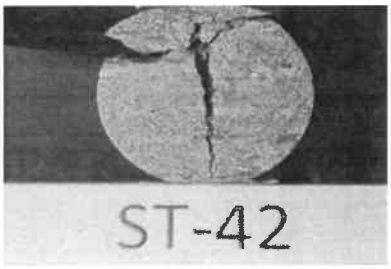
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-6
Run R15
155.0-165.0 (158) ft

ST-42





Intact material failure

L/D: 0.5

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/06/12
Tested By:	bfm
Checked By:	mpd
Sample Type:	Core
Sample Description:	---
Strain Rate:	2.5%/min.

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

Boring ID	Sample ID	Depth, ft.	Test No.	Thickness (L), in.			Diameter (D), in.	Failure Load (P), lb.	Splitting Tensile Strength, psi
B-7	Run R5	55.0-65.0 (62)	ST-25	1.06	1.07	1.07	1.99	4,345	1,300
B-7	Run R-6	65.0-75.0 (68)	ST-26	0.99	0.98	0.99	1.99	3,447	1,120
B-7	Run R-6	65.0-75.0 (69)	ST-27	1.02	1.01	1.01	1.99	2,336	736
B-7	Run R7	75.0-85.0 (83)	ST-28	1.00	0.99	0.98	2.00	3,626	1,170
B-7	Run R14	145.0-155.0 (154)	ST-29	1.05	1.05	1.05	1.99	1,325	405
B-7	Run R15	155.0-165.0 (156)	ST-30	0.97	0.96	0.97	2.00	2,852	943

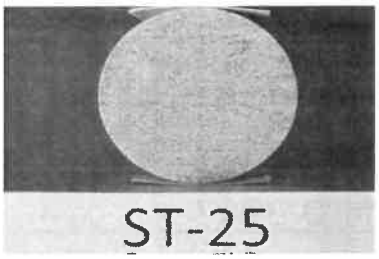
GeoTesting EXPRESS

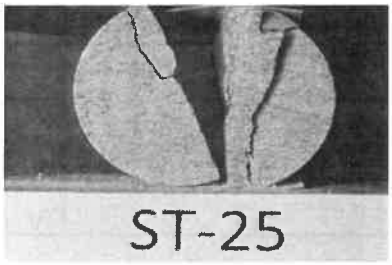
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-7
Run R5
55.0-65.0 (62) ft

ST-25





Intact material failure

L/D: 0.5

B-7
Run R-6
65.0-75.0 (68) ft

ST-26





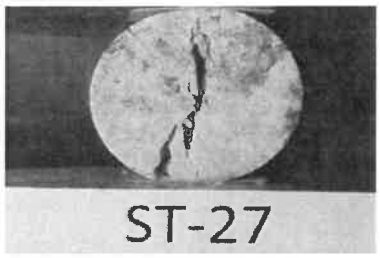
Intact material failure

L/D: 0.5

B-7
Run R-6
65.0-75.0 (69) ft

ST-27





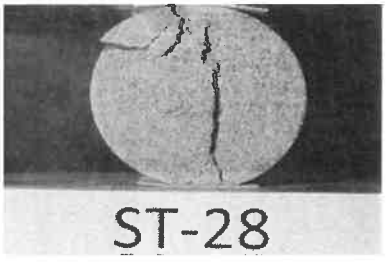
Intact material failure

L/D: 0.5

B-7
Run R7
75.0-85.0 (83) ft

ST-28





Intact material failure

L/D: 0.5

B-7
Run R14
145.0-155.0 (154) ft

ST-29





Discontinuity failure

L/D: 0.5

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-7
Run R15
155.0-165.0 (156) ft

ST-30





Intact material failure

L/D: 0.5

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	06/28/12
Tested By:	jsc
Checked By:	mpd
Sample Type:	Core
Sample Description:	---
Strain Rate:	2.5%/min.

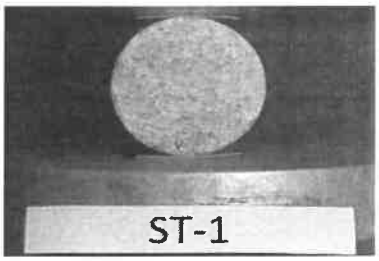
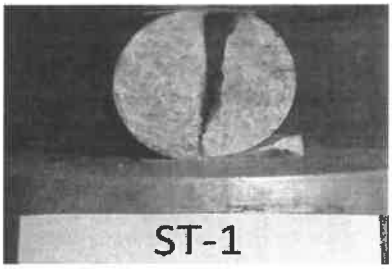
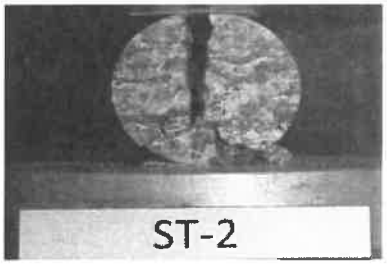
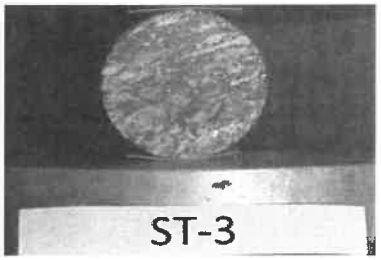
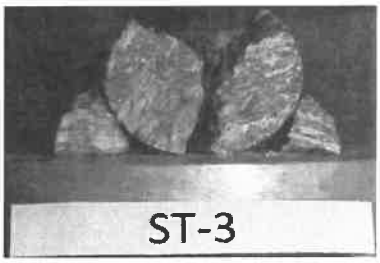
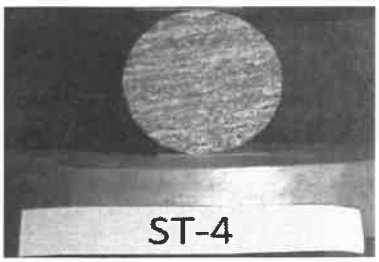
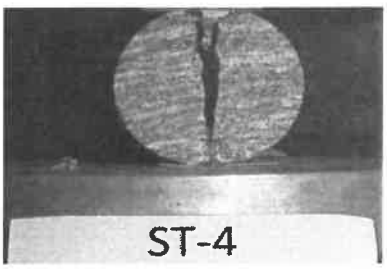
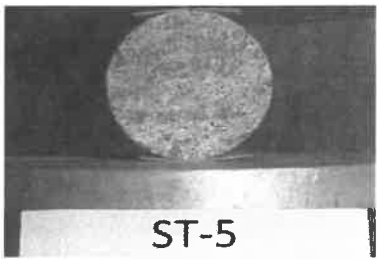
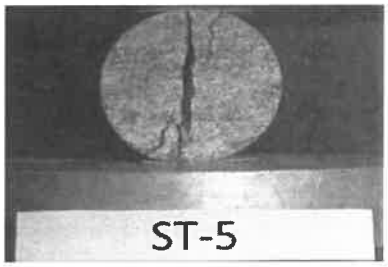
Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

Boring ID	Sample ID	Depth, ft.	Test No.	Thickness (L), in.			Diameter (D), in.	Failure Load (P), lb.	Splitting Tensile Strength, psi
B-8	Run 4	48.0-58.0 (56)	ST-1	0.96	0.96	0.96	1.99	2,691	897
B-8	Run 5	58.0-68.0 (61)	ST-2	0.93	0.94	0.94	1.99	1,741	596
B-8	Run 5	58.0-68.0 (61)	ST-3	0.93	0.92	0.92	1.99	1,736	603
B-8	Run 6	68.0-78.0 (78)	ST-4	0.95	0.96	0.96	1.99	2,851	953
B-8	Run 11	118.0-128.0 (126)	ST-5	0.92	0.91	0.91	1.99	2,835	992
B-8	Run 12	128.0-138.0 (128)	ST-6	0.96	0.96	0.96	1.99	2,008	668

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-8 Run 4 48.0-58.0 (56) ft ST-1			Intact material failure L/D: 0.5
B-8 Run 5 58.0-68.0 (61) ft ST-2			Intact material failure L/D: 0.5
B-8 Run 5 58.0-68.0 (61) ft ST-3			Intact material failure L/D: 0.5
B-8 Run 6 68.0-78.0 (78) ft ST-4			Intact material failure L/D: 0.5
B-8 Run 11 118.0-128.0 (126) ft ST-5			Intact material failure L/D: 0.5

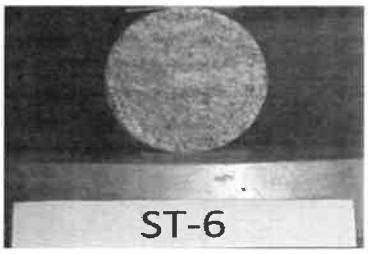
GeoTesting EXPRESS

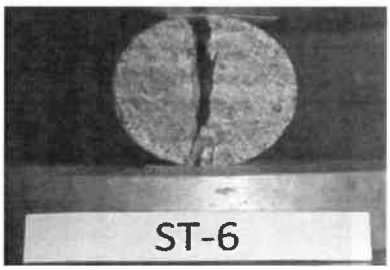
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-8
Run 12
128.0-138.0 (128) ft

ST-6





Intact material failure

L/D: 0.5

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/06/12
Tested By:	bfm
Checked By:	mpd
Sample Type:	Core
Sample Description:	---
Strain Rate:	2.5%/min.

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

Boring ID	Sample ID	Depth, ft.	Test No.	Thickness (L), in.			Diameter (D), in.	Failure Load (P), lb.	Splitting Tensile Strength, psi
B-9	Run R4	45.0-55.0 (50)	ST-31	0.97	0.98	0.99	1.99	3,886	1,270
B-9	Run R5	55.0-65.0 (62)	ST-32	0.96	0.96	0.96	1.99	2,298	765
B-9	Run R5	55.0-65.0 (63)	ST-33	1.00	1.01	1.00	2.00	1,412	448
B-9	Run R6	65.0-75.0 (71)	ST-34	0.94	0.94	0.90	2.00	1,199	412
B-9	Run R6	65.0-75.0 (72)	ST-35	0.97	0.98	0.95	1.99	4,625	1,530
B-9	Run R10	105.0-115.0 (106)	ST-36	1.04	1.03	1.02	2.00	1,397	433

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/20/12
Tested By:	bfm
Checked By:	njh
Sample Type:	Core
Sample Description:	---
Strain Rate:	2.5%/min.

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

Boring ID	Sample ID	Depth, ft.	Test No.	Thickness (L), in.			Diameter (D), in.	Failure Load (P), lb.	Splitting Tensile Strength, psi
B-10	Run R2	44.0-54.0 (54)	ST-7	0.93	0.93	0.92	1.99	1,185	411
B-10	Run R4	64.0-74.0 (70)	ST-8	0.95	0.93	0.93	1.99	1,207	414
B-10	Run R4	64.0-74.0 (70)	ST-9	0.97	0.94	0.94	1.99	976	329
B-10	Run R5	74.0-84.0 (84)	ST-10	0.95	0.95	0.94	1.99	939	318
B-11	Run R2	35.5-45.5 (36)	ST-11	0.90	0.90	0.90	1.98	3,626	1,300
B-11	Run R3	45.5-55.5 (46)	ST-12	0.95	0.95	0.95	1.98	2,367	804
B-11	Run R4	55.5-65.5 (63)	ST-13	0.94	0.94	0.93	1.98	3,643	1,250
B-11	Run R6	75.5-85.5 (80)	ST-14	0.95	0.95	0.95	1.98	4,859	1,650
B-11	Run R7	85.5-95.5 (88)	ST-15	0.90	0.90	0.90	1.98	4,128	1,470
B-11	Run R8	95.5-105.5 (97)	ST-16	0.93	0.93	0.92	1.98	4,353	1,510

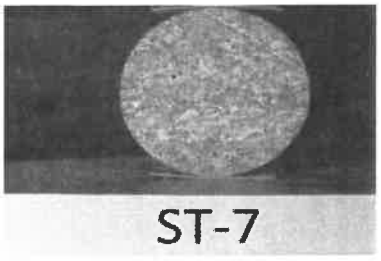
GeoTesting EXPRESS

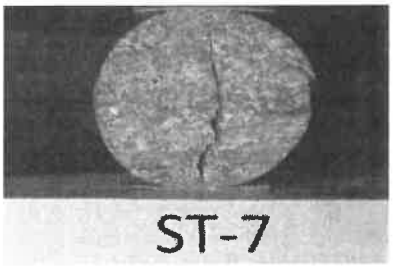
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-10
Run R2
44.0-54.0 (54) ft

ST-7



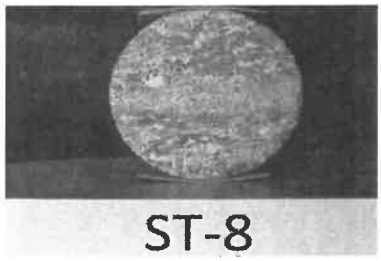


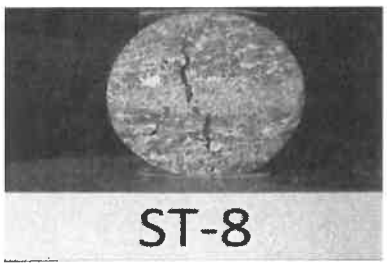
Intact material failure

L/D: 0.5

B-10
Run R4
64.0-74.0 (70) ft

ST-8



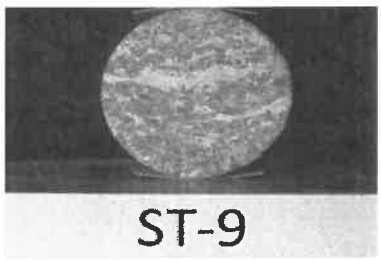


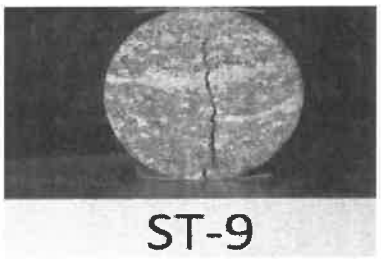
Intact material failure

L/D: 0.5

B-10
Run R4
64.0-74.0 (70) ft

ST-9





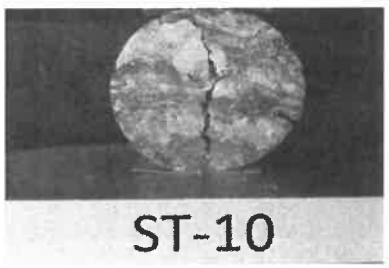
Intact material failure

L/D: 0.5

B-10
Run R5
74.0-84.0 (84) ft

ST-10



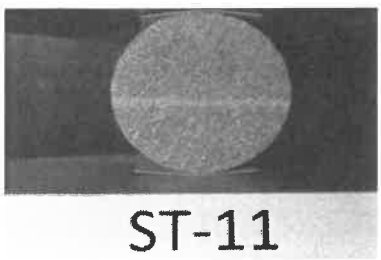


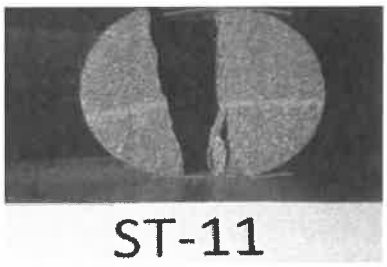
Intact material failure

L/D: 0.5

B-11
Run R2
35.5-45.5 (36) ft

ST-11





Intact material failure

L/D: 0.5

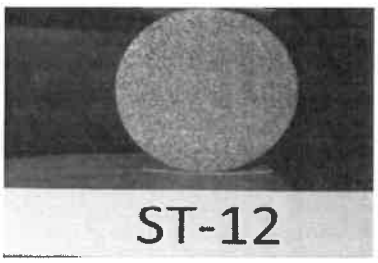
GeoTesting EXPRESS

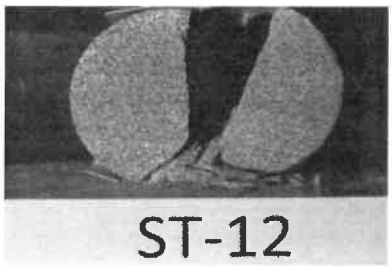
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-11
Run R3
45.5-55.5 (46) ft

ST-12





Intact material failure

L/D: 0.5

B-11
Run R4
55.5-65.5 (63) ft

ST-13





Intact material failure

L/D: 0.5

B-11
Run R6
75.5-85.5 (80) ft

ST-14





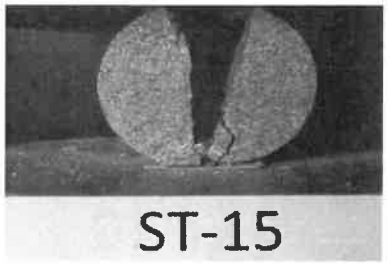
Intact material failure

L/D: 0.5

B-11
Run R7
85.5-95.5 (88) ft

ST-15



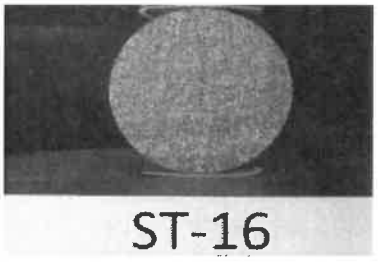


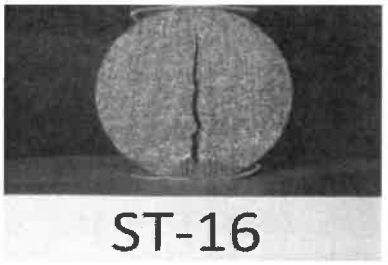
Intact material failure

L/D: 0.5

B-11
Run R8
95.5-105.5 (97) ft

ST-16





Intact material failure

L/D: 0.5

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/20/12
Tested By:	bfm
Checked By:	njh
Sample Type:	Core
Sample Description:	---
Strain Rate:	2.5%/min.

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

Boring ID	Sample ID	Depth, ft.	Test No.	Thickness (L), in.			Diameter (D), in.	Failure Load (P), lb.	Splitting Tensile Strength, psi
B-12	Run R4	55.0-65.0 (56)	ST-17	0.93	0.93	0.92	1.99	4,338	1,500
B-12	Run R5	65.0-75.0 (70)	ST-18	0.93	0.93	0.93	1.99	2,788	960
B-12	Run R5	65.0-75.0 (73)	ST-19	0.93	0.93	0.94	1.99	3,750	1,280
B-12	Run R13	145.0-155.0 (151)	ST-20	0.94	0.94	0.94	1.99	4,546	1,540
B-13	Run R6	60.0-70.0 (60)	ST-21	0.93	0.93	0.93	1.99	4,104	1,410
B-13	Run R6	60.0-70.0 (64)	ST-22	0.94	0.95	0.95	1.99	2,585	872
B-13	Run R7	70.0-80.0 (72)	ST-23	0.95	0.94	0.93	1.99	3,842	1,310
B-13	Run R7	70.0-80.0 (73)	ST-24	0.98	0.98	0.97	1.99	5,872	1,930

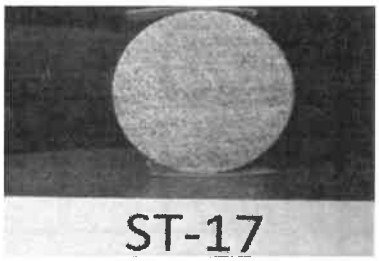
GeoTesting EXPRESS

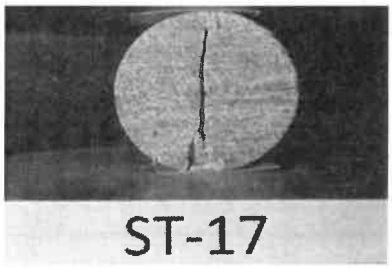
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-12
Run R4
55.0-65.0 (56) ft

ST-17





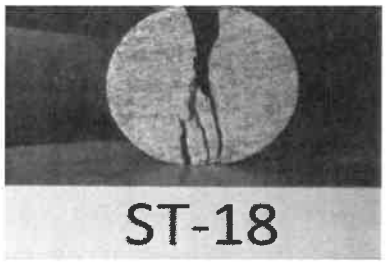
Intact material failure

L/D: 0.5

B-12
Run R5
65.0-75.0 (70) ft

ST-18



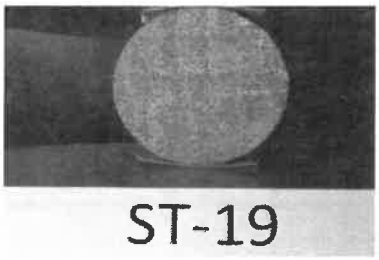


Intact material failure

L/D: 0.5

B-12
Run R5
65.0-75.0 (73) ft

ST-19



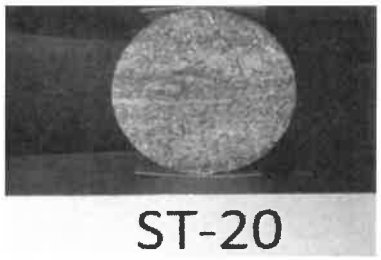


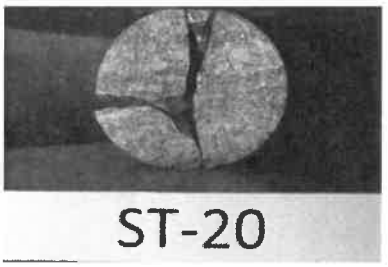
Intact material failure

L/D: 0.5

B-12
Run R13
145.0-155.0 (151) ft

ST-20





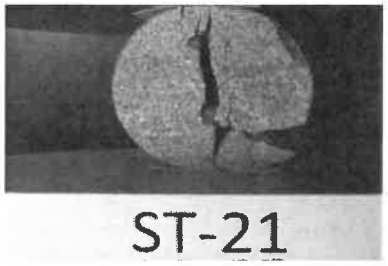
Intact material failure

L/D: 0.5

B-13
Run R6
60.0-70.0 (60) ft

ST-21





Intact material failure

L/D: 0.5

GeoTesting EXPRESS

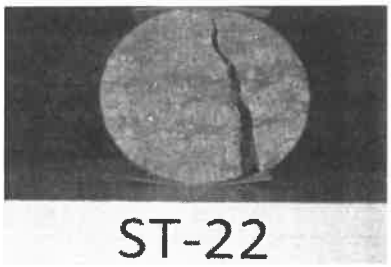
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-13
Run R6
60.0-70.0 (64) ft

ST-22





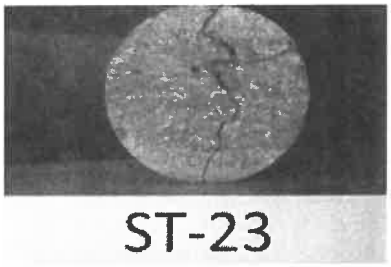
Intact material failure

L/D: 0.5

B-13
Run R7
70.0-80.0 (72) ft

ST-23





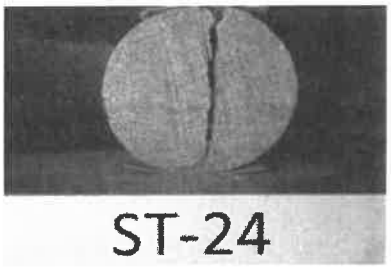
Intact material failure

L/D: 0.5

B-13
Run R7
70.0-80.0 (73) ft

ST-24





Intact material failure

L/D: 0.5

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	09/07/12
Tested By:	bfm
Checked By:	mpd
Sample Type:	Core
Sample Description:	---
Strain Rate:	2.5%/min.

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

Boring ID	Sample ID	Depth, ft.	Test No.	Thickness (L), in.			Diameter (D), in.	Failure Load (P), lb.	Splitting Tensile Strength, psi
B-1	Run R1	20-30 (22)	ST-43	0.73	0.74	0.74	1.98	600	261

GeoTesting EXPRESS

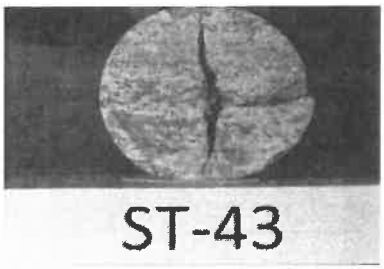
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-1
Run R1
20-30 (22) ft

ST-43





Intact material failure

L/D: 0.4

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	09/07/12
Tested By:	bfm
Checked By:	mpd
Sample Type:	Core
Sample Description:	---
Strain Rate:	2.5%/min.

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

Boring ID	Sample ID	Depth, ft.	Test No.	Thickness (L), in.			Diameter (D), in.	Failure Load (P), lb.	Splitting Tensile Strength, psi
B-2	Run R4	45-55 (49)	ST-44	0.92	0.91	0.91	1.99	1,920	673
B-2	Run R5	55-65 (61)	ST-45	0.98	0.97	0.97	1.98	3,280	1,080

GeoTesting EXPRESS

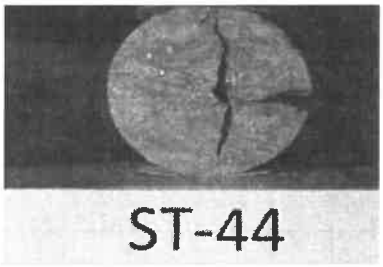
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-2
Run R4
45-55 (49) ft

ST-44





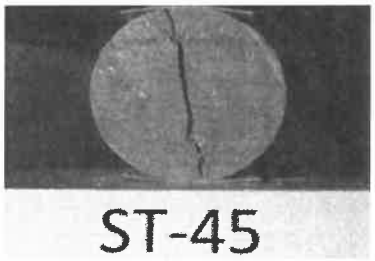
Intact material failure

L/D: 0.5

B-2
Run R5
55-65 (61) ft

ST-45





Intact material failure

L/D: 0.5

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	09/07/12
Tested By:	bfm
Checked By:	mpd
Sample Type:	Core
Sample Description:	---
Strain Rate:	2.5%/min.

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

Boring ID	Sample ID	Depth, ft.	Test No.	Thickness (L), in.			Diameter (D), in.	Failure Load (P), lb.	Splitting Tensile Strength, psi
B-3	Run R10	90-100 (91)	ST-46	0.95	0.95	0.96	1.99	4,230	1,420
B-3	Run R10	90-100 (99)	ST-47	0.94	0.92	0.91	2.00	4,444	1,530
B-3	Run R11	100-110 (105)	ST-48	0.98	0.98	0.98	1.99	3,336	1,090

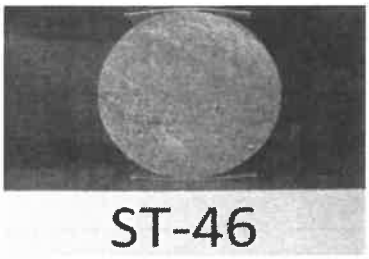
GeoTesting EXPRESS

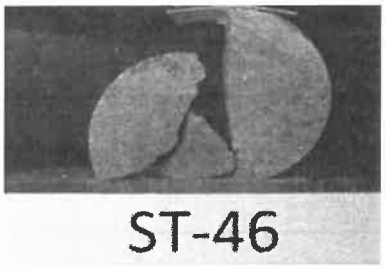
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-3
Run R10
90-100 (91) ft

ST-46





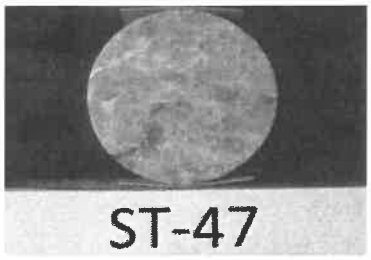
Intact material failure

L/D: 0.5

1420
1530.00
1090

B-3
Run R10
90-100 (99) ft

ST-47



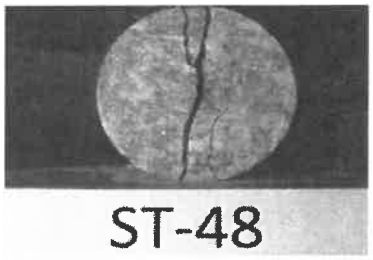


L/D: 0.5

B-3
Run R11
100-110 (105) ft

ST-48





Intact material failure

L/D: 0.5

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	09/07/12
Tested By:	bfm
Checked By:	mpd
Sample Type:	Core
Sample Description:	---
Strain Rate:	2.5%/min.

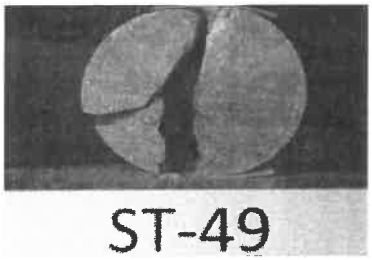
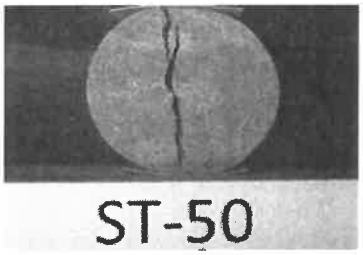
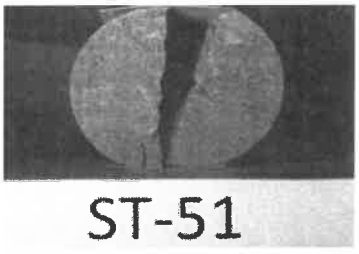
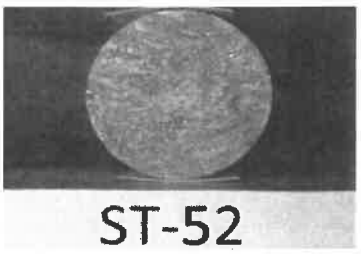
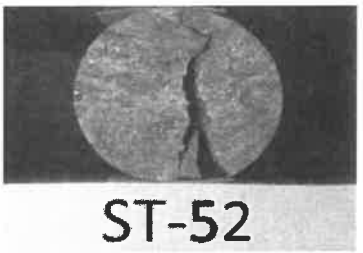
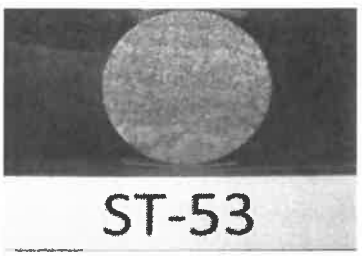
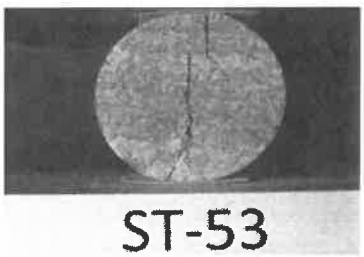
Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

Boring ID	Sample ID	Depth, ft.	Test No.	Thickness (L), in.			Diameter (D), in.	Failure Load (P), lb.	Splitting Tensile Strength, psi
B-5	Run R9	90-100 (90)	ST-49	0.92	0.92	0.91	1.99	3,771	1,310
B-5	Run R9	90-100 (98)	ST-50	0.94	0.93	0.92	2.00	3,939	1,350
B-5	Run R10	100-110 (102)	ST-51	0.91	0.91	0.91	1.99	3,773	1,330
B-5	Run R10	100-110 (109)	ST-52	0.91	0.92	0.92	1.99	2,525	880
B-5	Run R16	160-170 (164)	ST-53	0.95	0.96	0.96	1.99	3,362	1,120
B-5	Run R17	170-175 (174)	ST-54	1.06	1.04	1.05	1.99	2,686	821

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-5 Run R9 90-100 (90) ft ST-49			Intact material failure L/D: 0.5
B-5 Run R9 90-100 (98) ft ST-50			Intact material failure L/D: 0.5
B-5 Run R10 100-110 (102) ft ST-51			Intact material failure L/D: 0.5
B-5 Run R10 100-110 (109) ft ST-52			Intact material failure L/D: 0.5
B-5 Run R16 160-170 (164) ft ST-53			Intact material failure L/D: 0.5

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987

Splitting Tensile Strength of Intact Rock Core Specimens by ASTM D 3967

B-5
Run R17
170-175 (174) ft

ST-54





Intact material failure

L/D: 0.5

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/13/12
Tested By:	daa
Checked By:	mpd

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-6	Run R5	55-65 (60)	174	9,383	1	NO *
B-6	Run R6 (A)	65-75 (67)	180	8,453	2	NO *
B-6	Run R6 (B)	65-75 (73)	173	10,503	1	YES
B-6	Run R7	75-85 (78)	174	10,417	1 & 2	NO *
B-6	Run R14	145-155 (153)	173	11,283	1	YES
B-6	Run R15	155-165 (158)	171	6,674	2	NO *

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.
All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.
Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)
* The as-received core did not meet the ASTM side straightness tolerance.

GeoTesting EXPRESS

Client:	CDM	Test Date:	8/13/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-6		
Sample ID:	Run R5		
Depth:	55-65 (60) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.28	4.28	4.28
Specimen Diameter, in:	1.98	1.99	1.99
Specimen Mass, g:	606.05		
Bulk Density, lb/ft^3	174		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

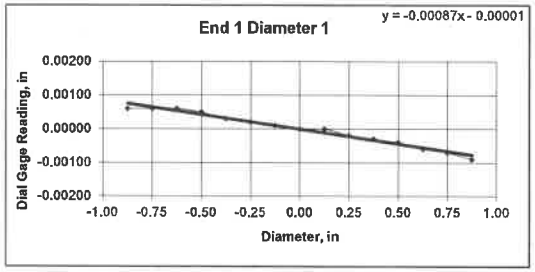
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00060	0.00060	0.00060	0.00050	0.00030	0.00020	0.00010	0.00000	0.00000	-0.00020	-0.00030	-0.00040	-0.00060	-0.00070	-0.00090
Diameter 2, in (rotated 90°)	0.00040	0.00040	0.00040	0.00030	0.00030	0.00020	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00040	-0.00050

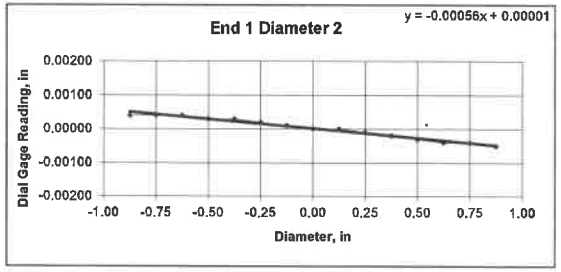
Difference between max and min readings, in: 0° = 0.00150 90° = 0.00090

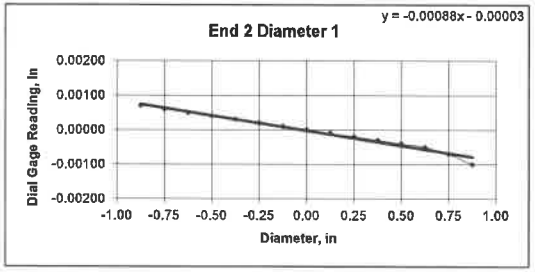
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00070	0.00060	0.00050	0.00040	0.00030	0.00020	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00070	-0.00100
Diameter 2, in (rotated 90°)	0.00040	0.00040	0.00040	0.00030	0.00030	0.00020	0.00010	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00030	-0.00040

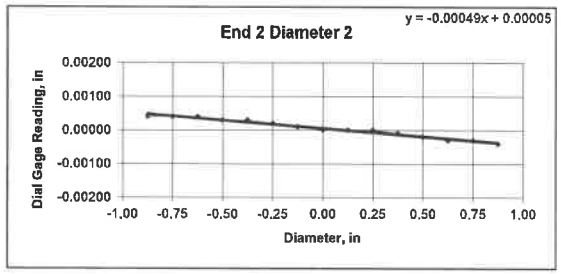
Difference between max and min readings, in: 0° = 0.0017 90° = 0.0008

Maximum difference must be < 0.0020 in. Difference = ± 0.00085
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00087
Angle of Best Fit Line: -0.04985

End 2:
Slope of Best Fit Line -0.00088
Angle of Best Fit Line: -0.05042

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00056
Angle of Best Fit Line: -0.03209

End 2:
Slope of Best Fit Line -0.00049
Angle of Best Fit Line: -0.02807

Maximum Angular Difference: 0.00401

Parallelism Tolerance Met? **YES**
Spherically Seated

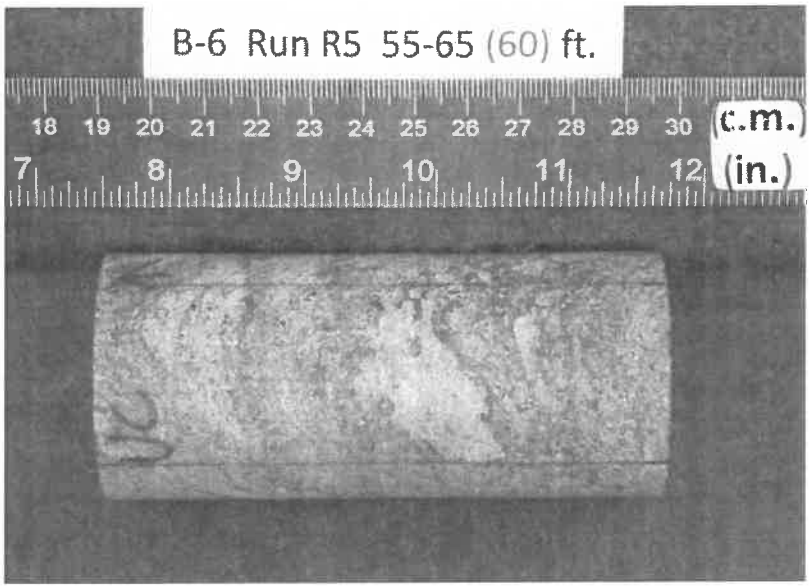
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00150	1.985	0.00076	0.043	YES
Diameter 2, in (rotated 90°)	0.00090	1.985	0.00045	0.026	YES
END 2					
Diameter 1, in	0.00170	1.985	0.00086	0.049	YES
Diameter 2, in (rotated 90°)	0.00080	1.985	0.00040	0.023	YES

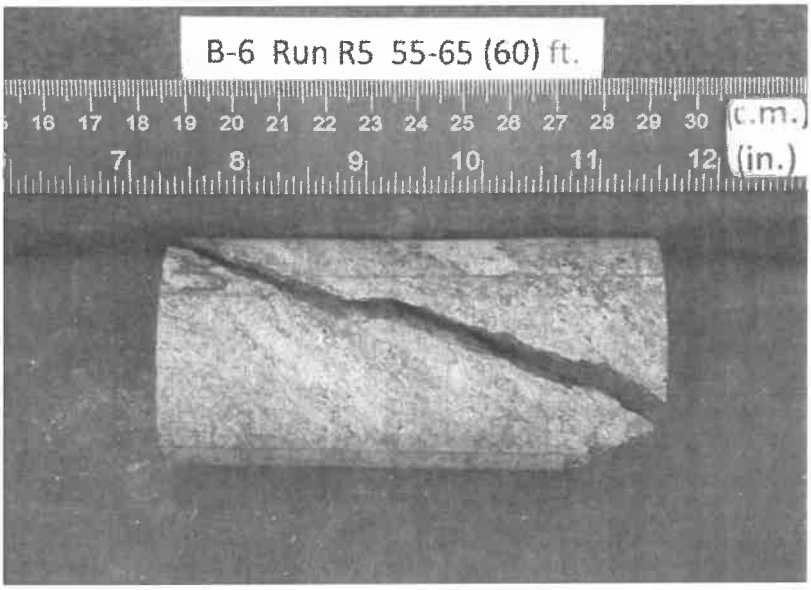
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/13/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-6
Sample ID:	Run R5
Depth, ft:	55-65 (60)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	8/13/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-6		
Sample ID:	Run R6 (A)		
Depth:	65-75 (67) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.39	4.39	4.39
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	644.74		
Bulk Density, lb/ft^3	180		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

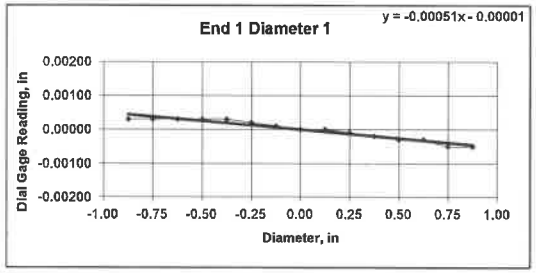
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00030	0.00030	0.00030	0.00030	0.00030	0.00020	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00030	-0.00050	-0.00050
Diameter 2, in (rotated 90°)	0.00040	0.00030	0.00030	0.00030	0.00030	0.00020	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00050	-0.00060	-0.00080	-0.00090

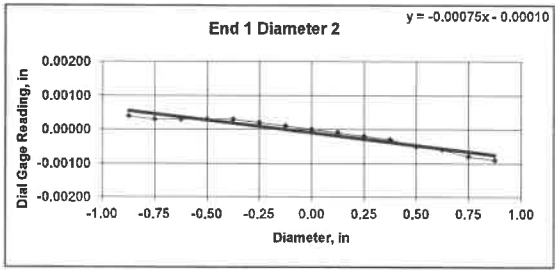
Difference between max and min readings, in: 0° = 0.00080 90° = 0.00130

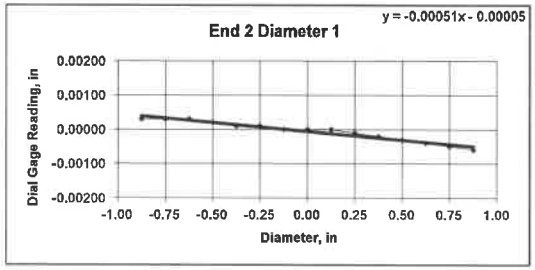
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00030	0.00030	0.00030	0.00020	0.00010	0.00010	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00060
Diameter 2, in (rotated 90°)	0.00050	0.00050	0.00050	0.00040	0.00040	0.00010	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00050	-0.00060	-0.00060	-0.00080

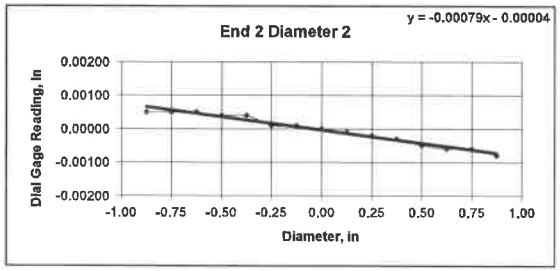
Difference between max and min readings, in: 0° = 0.0009 90° = 0.0013

Maximum difference must be < 0.0020 in. Difference = ± 0.00065
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00051
Angle of Best Fit Line: -0.02922

End 2:
Slope of Best Fit Line -0.00051
Angle of Best Fit Line: -0.02922

Maximum Angular Difference: 0.00000

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00075
Angle of Best Fit Line: -0.04297

End 2:
Slope of Best Fit Line -0.00079
Angle of Best Fit Line: -0.04526

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

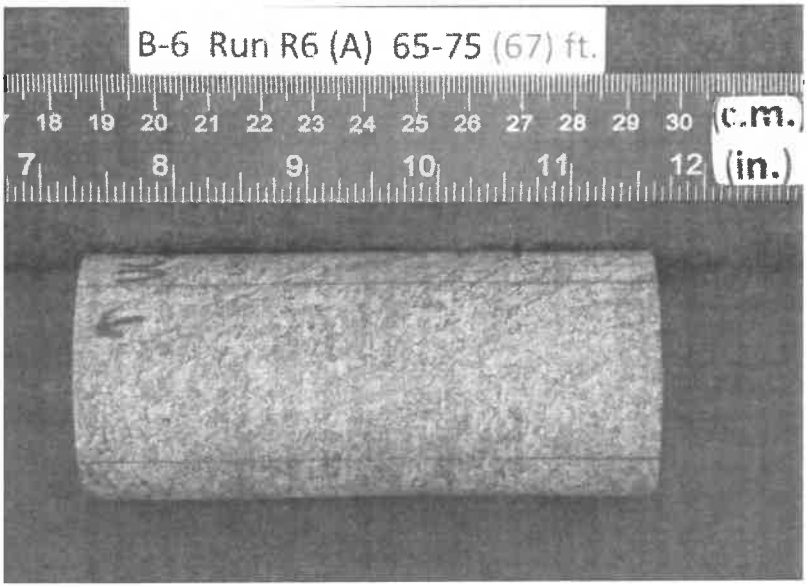
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00080	1.990	0.00040	0.023	YES
Diameter 2, in (rotated 90°)	0.00130	1.990	0.00065	0.037	YES
END 2					
Diameter 1, in	0.00090	1.990	0.00045	0.026	YES
Diameter 2, in (rotated 90°)	0.00130	1.990	0.00065	0.037	YES

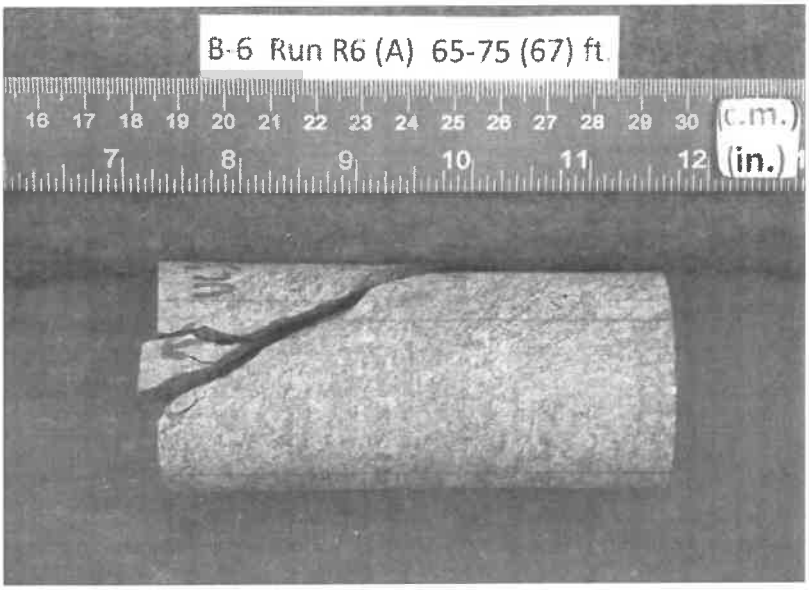
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/13/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-6
Sample ID:	Run R6 (A)
Depth, ft:	65-75 (67)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	8/13/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-6		
Sample ID:	Run R6 (B)		
Depth:	65-75 (73) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.39	4.39	4.39
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	620.18		
Bulk Density, lb/ft³	173		
Length to Diameter Ratio:	2.2		

Length to Diameter Ratio Tolerance Met? YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.

Straightness Tolerance Met? YES

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00040	0.00040	0.00040	0.00020	0.00020	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020	-0.00030	-0.00030	-0.00040	-0.00050
Diameter 2, in (rotated 90°)	0.00080	0.00060	0.00060	0.00040	0.00030	0.00020	0.00010	0.00000	0.00000	-0.00010	-0.00010	-0.00020	-0.00030	-0.00040	-0.00060

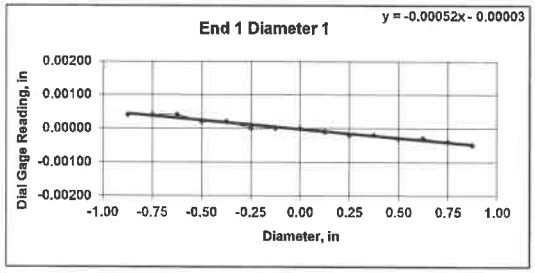
Difference between max and min readings, in: 0° = 0.00090 90° = 0.00140

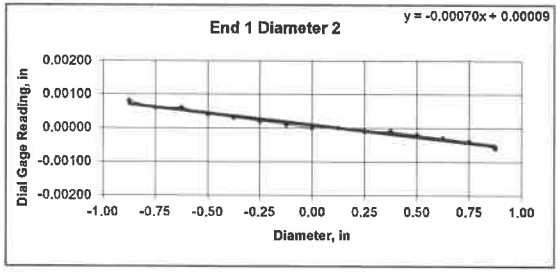
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00030	0.00030	0.00020	0.00020	0.00010	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00030	-0.00050	-0.00050	-0.00060	-0.00070
Diameter 2, in (rotated 90°)	0.00040	0.00040	0.00040	0.00030	0.00030	0.00010	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00060	-0.00080

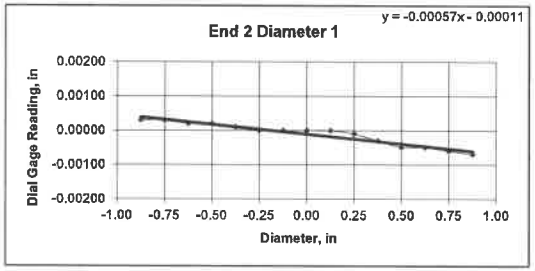
Difference between max and min readings, in: 0° = 0.001 90° = 0.0012

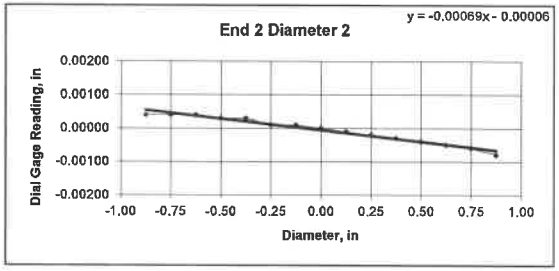
Maximum difference must be < 0.0020 in. Difference = ± 0.00070

Flatness Tolerance Met? YES









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00052
Angle of Best Fit Line: -0.02979

End 2:
Slope of Best Fit Line: -0.00057
Angle of Best Fit Line: -0.03266

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? YES
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: -0.00070
Angle of Best Fit Line: -0.04011

End 2:
Slope of Best Fit Line: -0.00069
Angle of Best Fit Line: -0.03953

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? YES
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

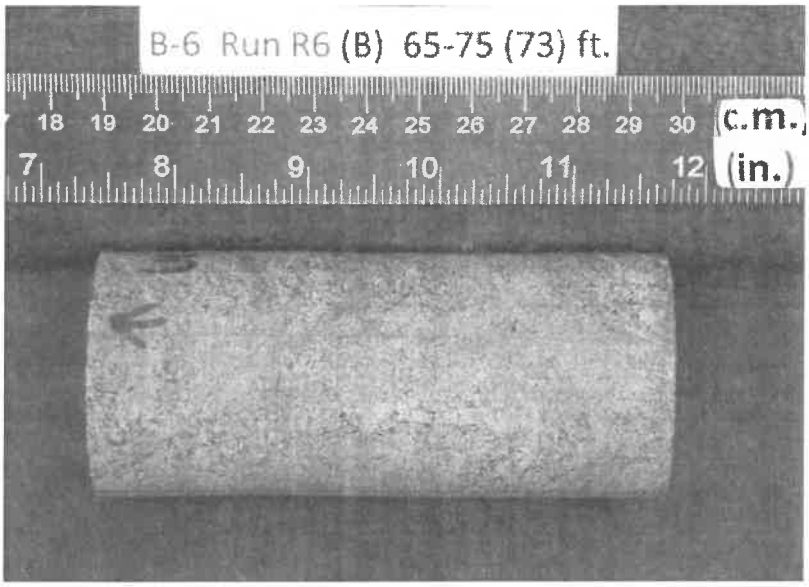
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00090	1.990	0.00045	0.026	YES
Diameter 2, in (rotated 90°)	0.00140	1.990	0.00070	0.040	YES
END 2					
Diameter 1, in	0.00100	1.990	0.00050	0.029	YES
Diameter 2, in (rotated 90°)	0.00120	1.990	0.00060	0.035	YES

Maximum angle of departure must be ≤ 0.25°

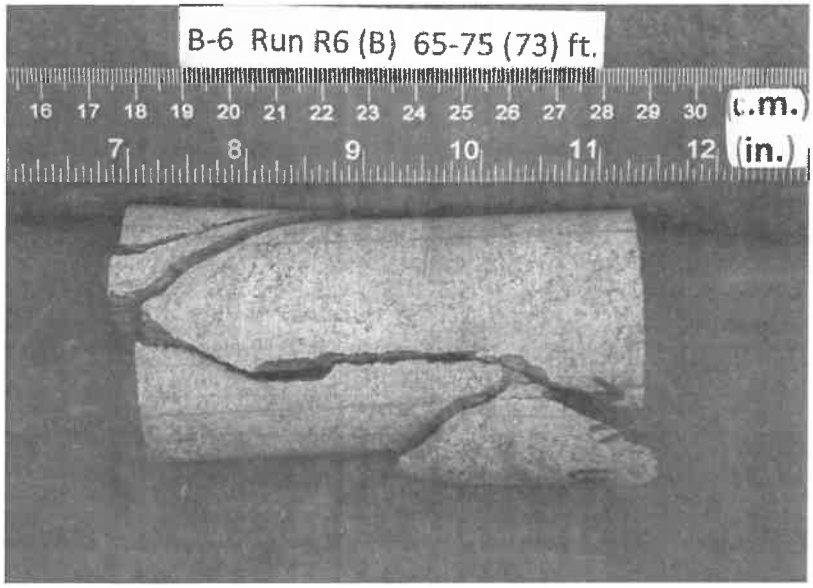
Perpendicularity Tolerance Met? YES

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/13/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-6
Sample ID:	Run R6 (B)
Depth, ft:	65-75 (73)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	8/13/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-6		
Sample ID:	Run R7		
Depth:	75-85 (78) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.45	4.45	4.45
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	634.4		
Bulk Density, lb/ft³	174		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00080	-0.00080	-0.00060	-0.00050	-0.00030	-0.00030	-0.00010	0.00000	0.00010	0.00020	0.00030	0.00040	0.00050	0.00060	0.00060
Diameter 2, in (rotated 90°)	-0.00050	-0.00050	-0.00040	-0.00030	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00020	0.00030	0.00030	0.00030	0.00040

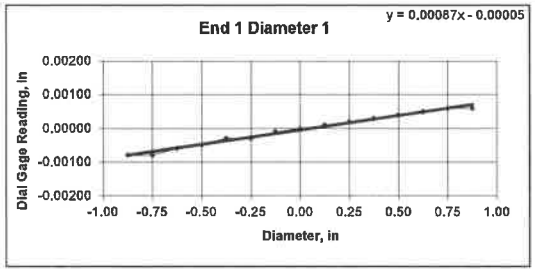
Difference between max and min readings, in: 0° = 0.00140 90° = 0.00090

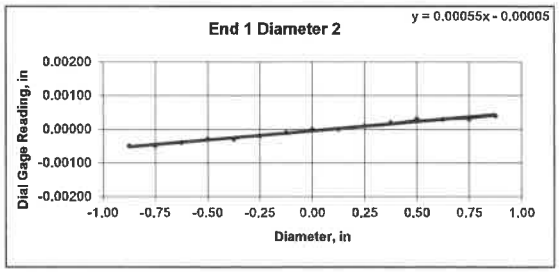
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00070	-0.00070	-0.00060	-0.00050	-0.00030	-0.00030	-0.00010	0.00000	0.00010	0.00020	0.00030	0.00040	0.00050	0.00060	0.00060
Diameter 2, in (rotated 90°)	-0.00050	-0.00050	-0.00040	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00020	0.00020	0.00030	0.00040	0.00040	0.00040

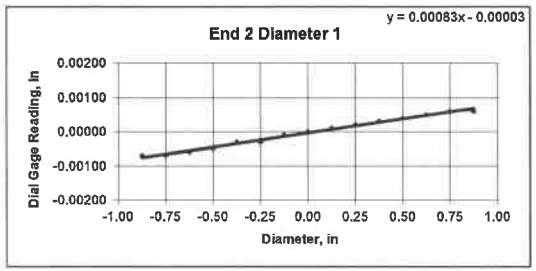
Difference between max and min readings, in: 0° = 0.0013 90° = 0.0009

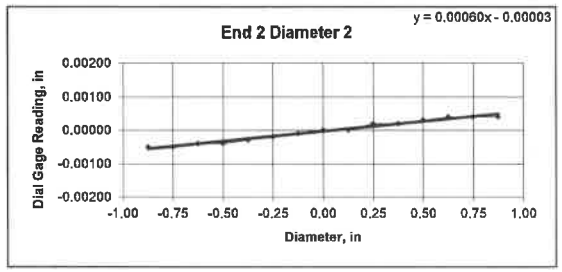
Maximum difference must be < 0.0020 in. Difference = ± 0.00070

Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00087
Angle of Best Fit Line: 0.04985

End 2:
Slope of Best Fit Line 0.00083
Angle of Best Fit Line: 0.04756

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00055
Angle of Best Fit Line: 0.03151

End 2:
Slope of Best Fit Line 0.00060
Angle of Best Fit Line: 0.03438

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? **YES**
Spherically Seated

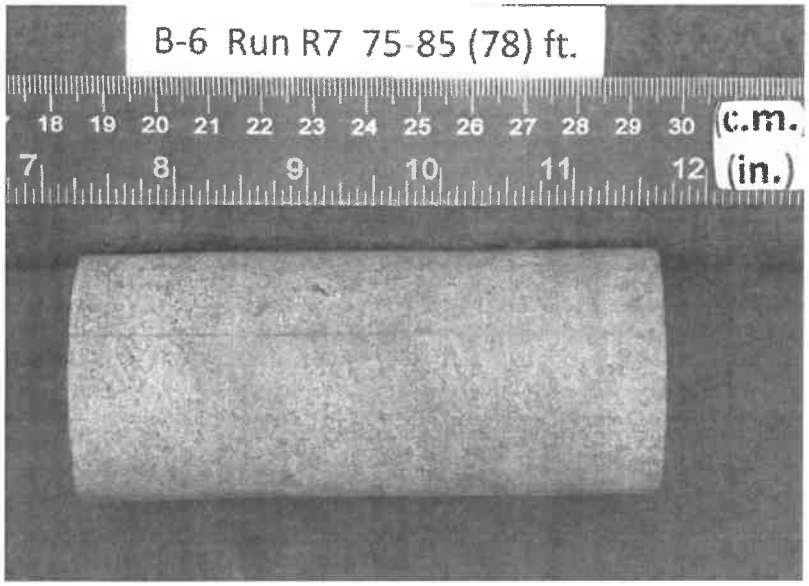
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00140	1.990	0.00070	0.040	YES
Diameter 2, in (rotated 90°)	0.00090	1.990	0.00045	0.026	YES
END 2					
Diameter 1, in	0.00130	1.990	0.00065	0.037	YES
Diameter 2, in (rotated 90°)	0.00090	1.990	0.00045	0.026	YES

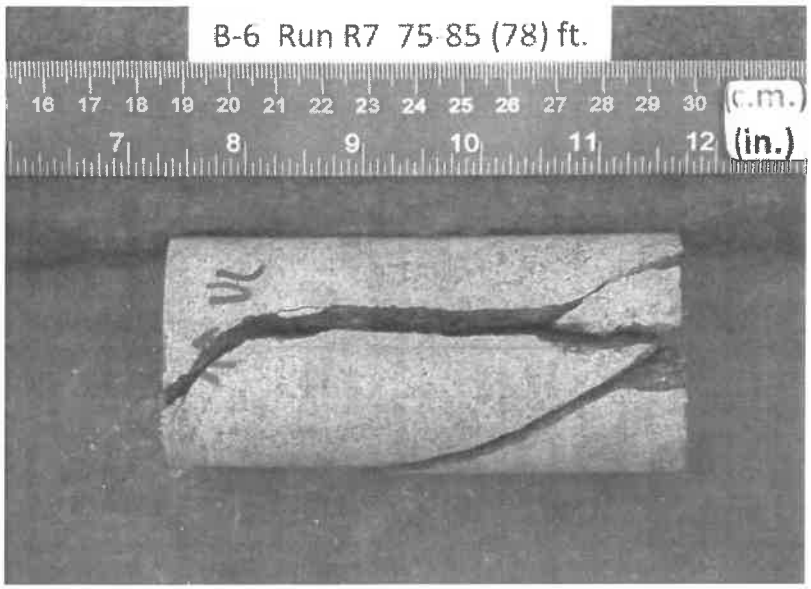
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/13/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-6
Sample ID:	Run R7
Depth, ft:	75-85 (78)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	8/13/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-6		
Sample ID:	Run R14		
Depth:	145-155 (153) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.30	4.30	4.30
Specimen Diameter, in:	1.99	2.00	2.00
Specimen Mass, g:	610.73		
Bulk Density, lb/ft³	173		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

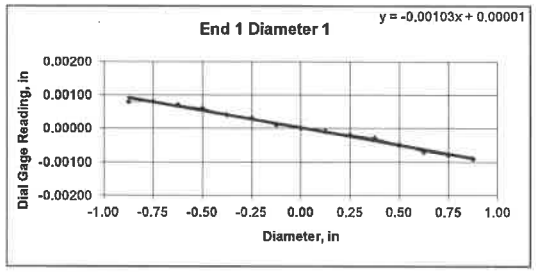
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00080	0.00080	0.00070	0.00060	0.00040	0.00030	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00050	-0.00070	-0.00080	-0.00090
Diameter 2, in (rotated 90°)	-0.00100	-0.00090	-0.00080	-0.00070	-0.00050	-0.00020	-0.00010	0.00000	0.00010	0.00020	0.00030	0.00040	0.00060	0.00060	0.00080

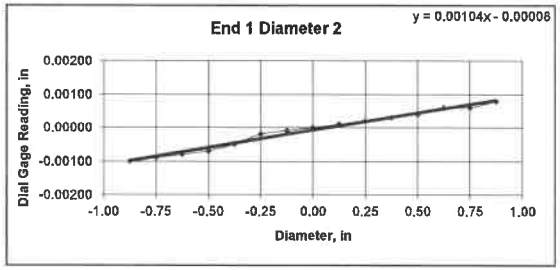
Difference between max and min readings, in: 0° = 0.00170 90° = 0.00180

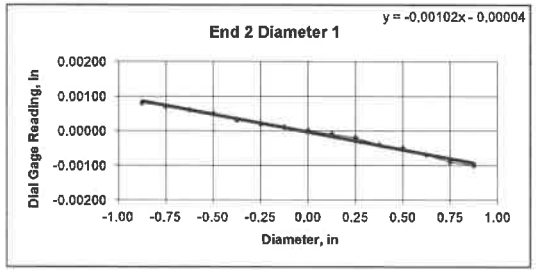
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00080	0.00070	0.00060	0.00050	0.00030	0.00020	0.00010	0.00000	-0.00010	-0.00020	-0.00040	-0.00050	-0.00070	-0.00090	-0.00100
Diameter 2, in (rotated 90°)	-0.00100	-0.00090	-0.00070	-0.00060	-0.00040	-0.00020	0.00000	0.00000	0.00010	0.00020	0.00030	0.00050	0.00070	0.00080	0.00090

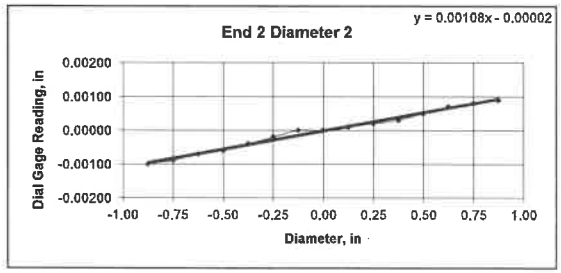
Difference between max and min readings, in: 0° = 0.0018 90° = 0.0019

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00103
Angle of Best Fit Line: -0.05901

End 2:
Slope of Best Fit Line: -0.00102
Angle of Best Fit Line: -0.05844

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: 0.00104
Angle of Best Fit Line: 0.05959

End 2:
Slope of Best Fit Line: 0.00108
Angle of Best Fit Line: 0.06188

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

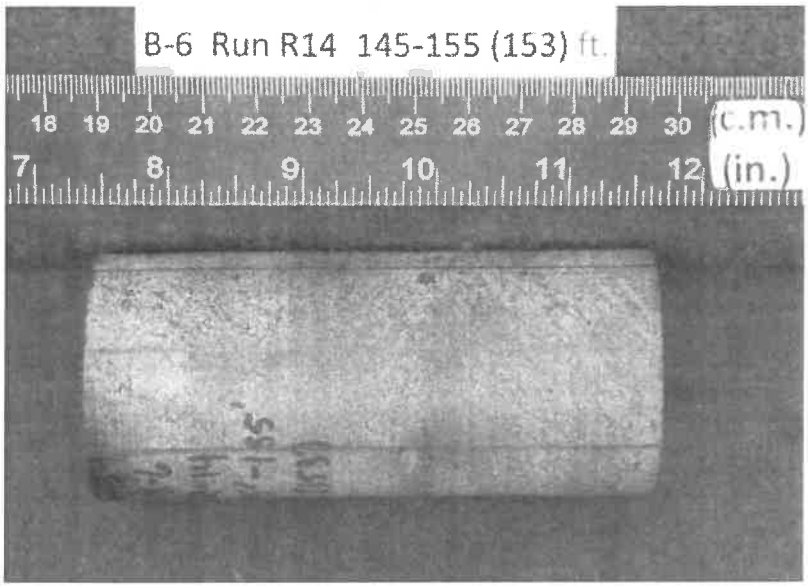
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00170	1.995	0.00085	0.049	YES
Diameter 2, in (rotated 90°)	0.00180	1.995	0.00090	0.052	YES
END 2					
Diameter 1, in	0.00180	1.995	0.00090	0.052	YES
Diameter 2, in (rotated 90°)	0.00190	1.995	0.00095	0.055	YES

Maximum angle of departure must be ≤ 0.25°

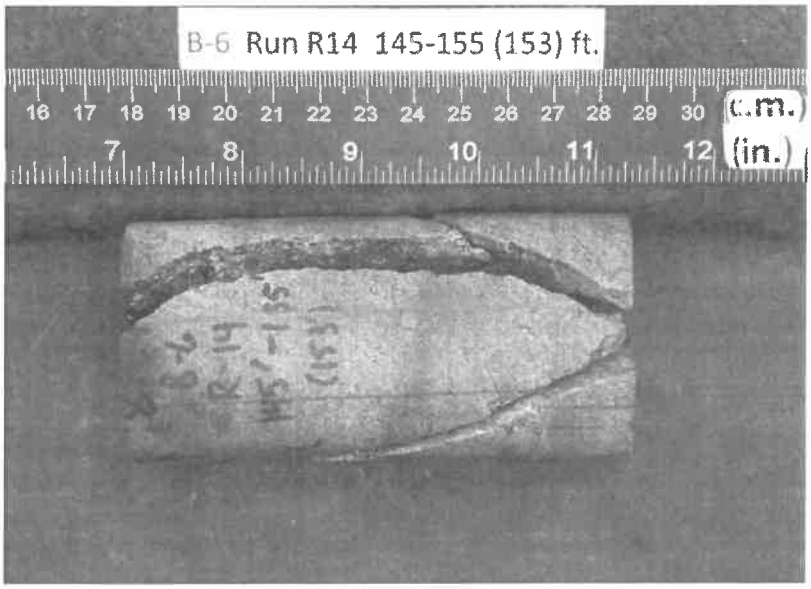
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/13/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-6
Sample ID:	Run R14
Depth, ft:	145-155 (153)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	8/13/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-6		
Sample ID:	Run R15		
Depth:	155-165 (158) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.36	4.36	4.36
Specimen Diameter, in:	1.99	2.00	2.00
Specimen Mass, g:	613.12		
Bulk Density, lb/ft^3	171		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

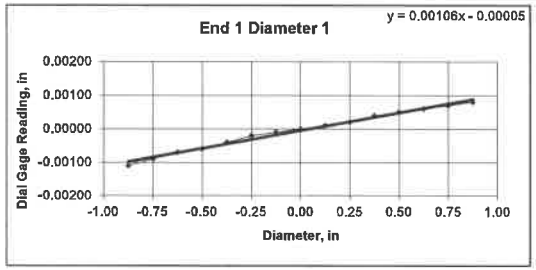
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00110	-0.00090	-0.00070	-0.00060	-0.00040	-0.00020	-0.00010	0.00000	0.00010	0.00020	0.00040	0.00050	0.00060	0.00070	0.00080
Diameter 2, in (rotated 90°)	0.00040	0.00040	0.00040	0.00030	0.00030	0.00020	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00040

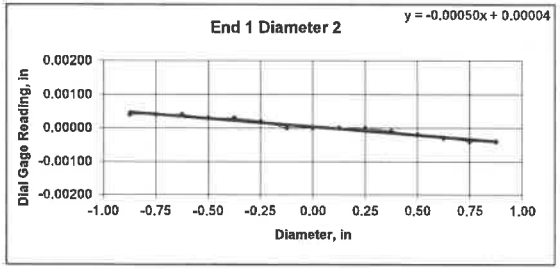
Difference between max and min readings, in: 0° = 0.00190 90° = 0.00080

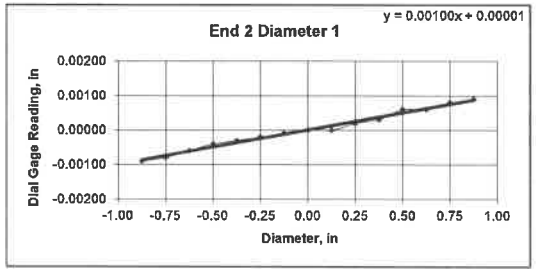
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00090	-0.00080	-0.00060	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00020	0.00030	0.00060	0.00060	0.00080	0.00090
Diameter 2, in (rotated 90°)	0.00050	0.00050	0.00040	0.00030	0.00030	0.00020	0.00010	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050

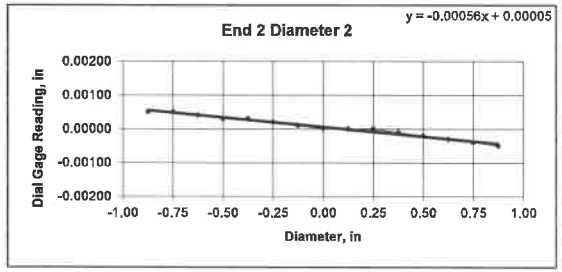
Difference between max and min readings, in: 0° = 0.0018 90° = 0.001

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00106
Angle of Best Fit Line: 0.06073

End 2:
Slope of Best Fit Line 0.00100
Angle of Best Fit Line: 0.05730

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00050
Angle of Best Fit Line: -0.02865

End 2:
Slope of Best Fit Line -0.00056
Angle of Best Fit Line: -0.03209

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

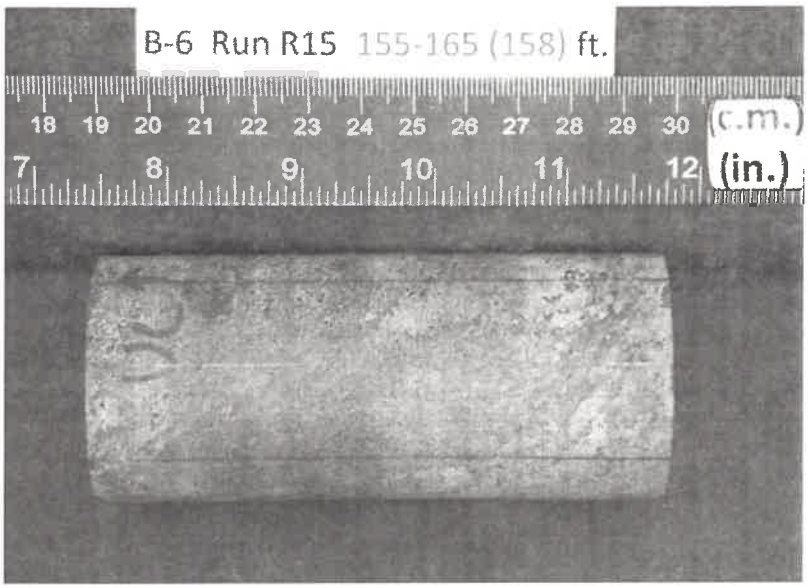
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00190	1.995	0.00095	0.055	YES
Diameter 2, in (rotated 90°)	0.00080	1.995	0.00040	0.023	YES
END 2					
Diameter 1, in	0.00180	1.995	0.00090	0.052	YES
Diameter 2, in (rotated 90°)	0.00100	1.995	0.00050	0.029	YES

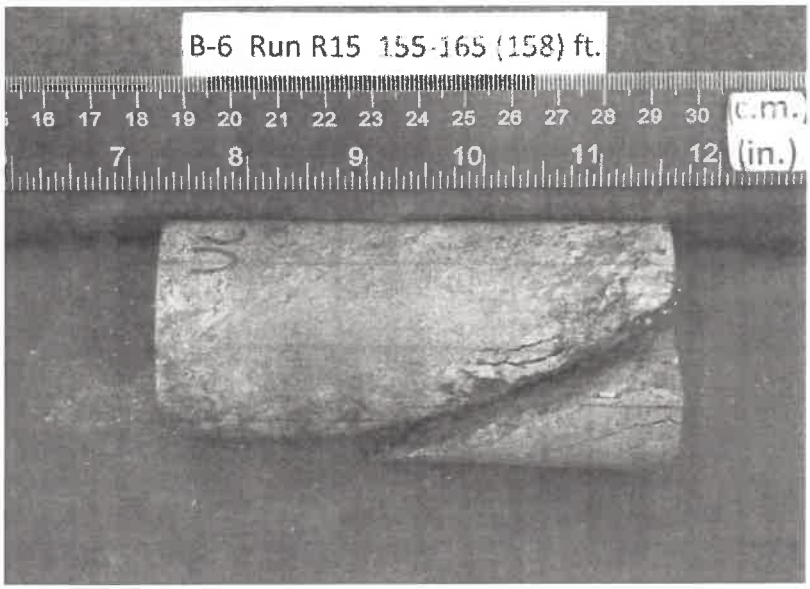
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/13/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-6
Sample ID:	Run R15
Depth, ft:	155-165 (158)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/07/12
Tested By:	daa
Checked By:	mpd

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-7	Run R5	55-65 (62)	168	20,116	1	YES
B-7	Run R6 (A)	65-75 (66)	169	5,603	2	NO*
B-7	Run R6 (B)	65-75 (69)	169	11,392	1	YES
B-7	Run R7	75-85 (83)	178	8,733	2	YES
B-7	Run R14	145-155 (153)	167	2,827	2	YES
B-7	Run R15	155-165 (155)	166	2,849	2	YES

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.
All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.
Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)
* The as-received core did not meet the ASTM side straightness tolerance.

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/7/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-7		
Sample ID:	Run R5		
Depth:	55-65 (62) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.46	4.46	4.46
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	612.69		
Bulk Density, lb/ft³	168		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

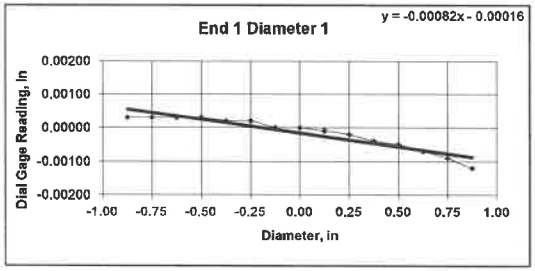
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00030	0.00030	0.00030	0.00030	0.00020	0.00020	0.00000	0.00000	-0.00010	-0.00020	-0.00040	-0.00050	-0.00070	-0.00090	-0.00120
Diameter 2, in (rotated 90°)	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00020	-0.00030

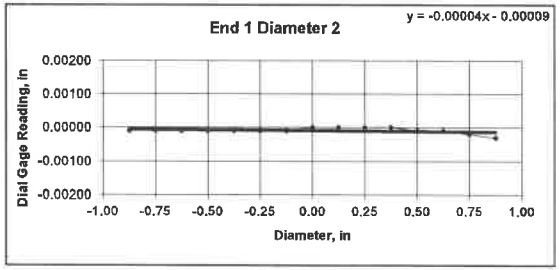
Difference between max and min readings, in: 0° = 0.00150 90° = 0.00030

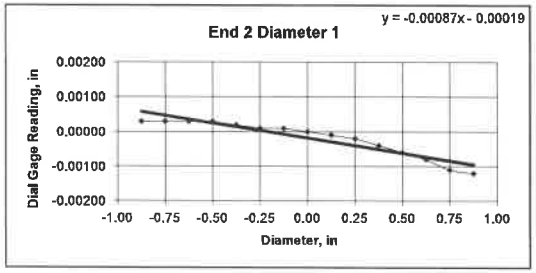
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00030	0.00030	0.00030	0.00030	0.00020	0.00010	0.00010	0.00000	-0.00010	-0.00020	-0.00040	-0.00060	-0.00080	-0.00110	-0.00120
Diameter 2, in (rotated 90°)	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00010

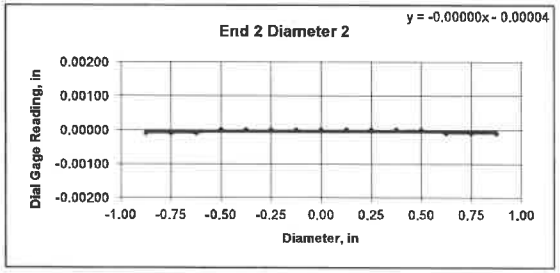
Difference between max and min readings, in: 0° = 0.0015 90° = 0.0001

Maximum difference must be < 0.0020 in. Difference = ± 0.00075
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00082
Angle of Best Fit Line: -0.04698

End 2:
Slope of Best Fit Line -0.00087
Angle of Best Fit Line: -0.04985

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00004
Angle of Best Fit Line: -0.00229

End 2:
Slope of Best Fit Line -0.00004
Angle of Best Fit Line: -0.00229

Maximum Angular Difference: 0.00000

Parallelism Tolerance Met? **YES**
Spherically Seated

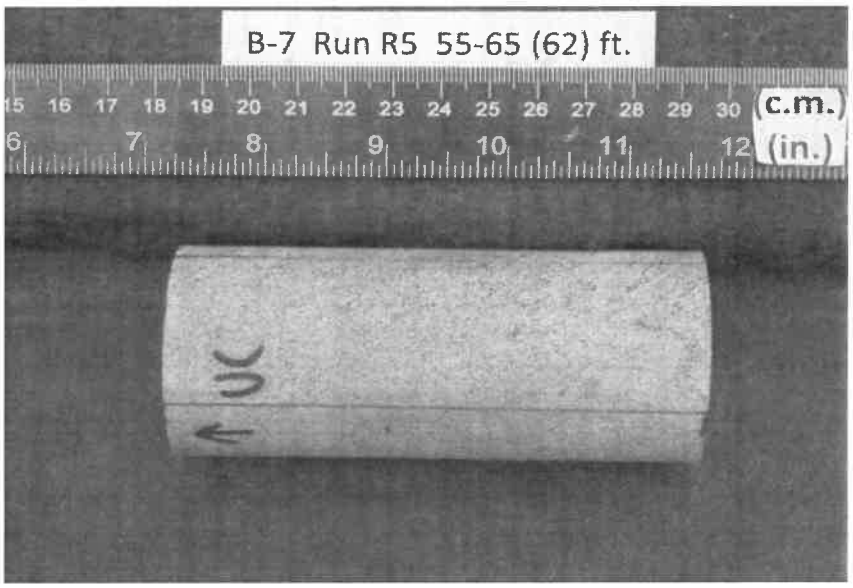
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00150	1.990	0.00075	0.043	YES
Diameter 2, in (rotated 90°)	0.00030	1.990	0.00015	0.009	YES
END 2					
Diameter 1, in	0.00150	1.990	0.00075	0.043	YES
Diameter 2, in (rotated 90°)	0.00010	1.990	0.00005	0.003	YES

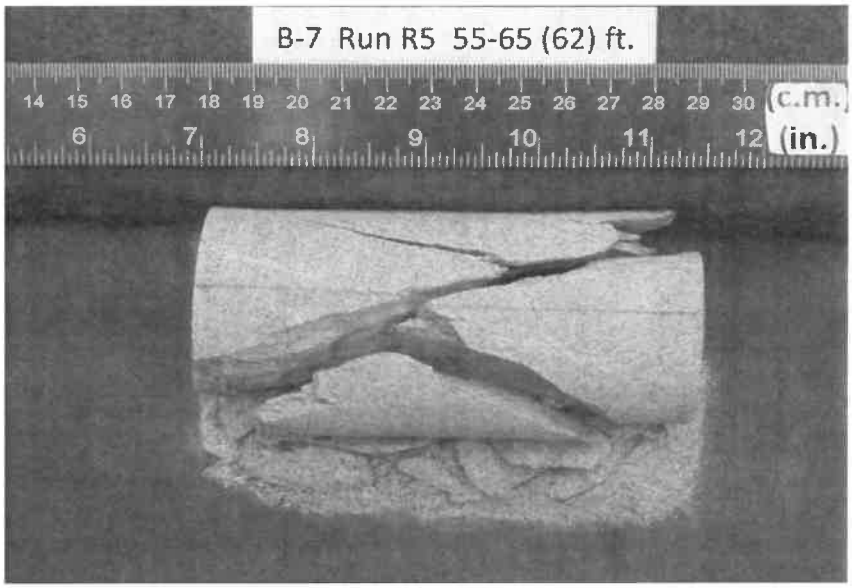
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-7
Sample ID:	Run R5
Depth, ft:	55-65 (62)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/6/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-7		
Sample ID:	Run R6 (A)		
Depth:	65-75 (66) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.30	4.30	4.30
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	592.9		
Bulk Density, lb/ft^3	169		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

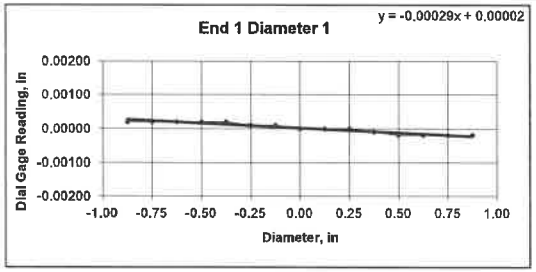
	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
END 1															
Diameter 1, in	0.00020	0.00020	0.00020	0.00020	0.00020	0.00010	0.00010	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020	-0.00020	-0.00020
Diameter 2, in (rotated 90°)	-0.00100	-0.00100	-0.00070	-0.00050	-0.00030	-0.00020	-0.00010	0.00000	0.00010	0.00030	0.00040	0.00060	0.00060	0.00070	0.00080

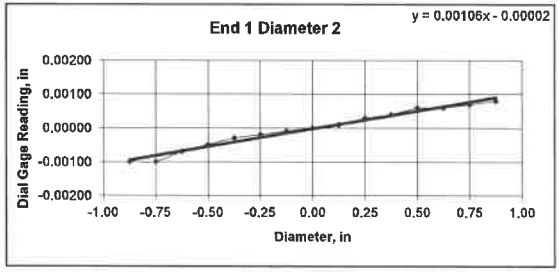
Difference between max and min readings, in: 0° = 0.00040 90° = 0.00180

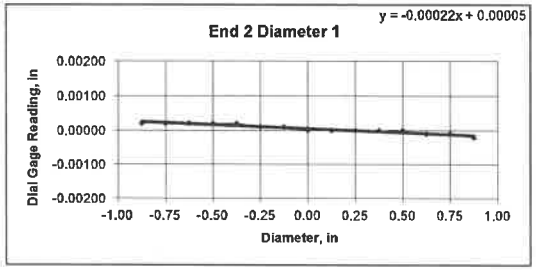
	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
END 2															
Diameter 1, in	0.00020	0.00020	0.00020	0.00020	0.00020	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00020
Diameter 2, in (rotated 90°)	-0.00090	-0.00080	-0.00070	-0.00050	-0.00040	-0.00020	-0.00010	0.00000	0.00010	0.00030	0.00040	0.00050	0.00060	0.00080	0.00090

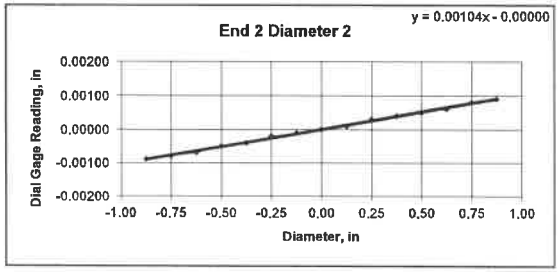
Difference between max and min readings, in: 0° = 0.0004 90° = 0.0018

Maximum difference must be < 0.0020 in. Difference = ± 0.00090
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00029
Angle of Best Fit Line: -0.01662

End 2:
Slope of Best Fit Line -0.00022
Angle of Best Fit Line: -0.01261

Maximum Angular Difference: 0.00401

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00106
Angle of Best Fit Line: 0.06073

End 2:
Slope of Best Fit Line 0.00104
Angle of Best Fit Line: 0.05959

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

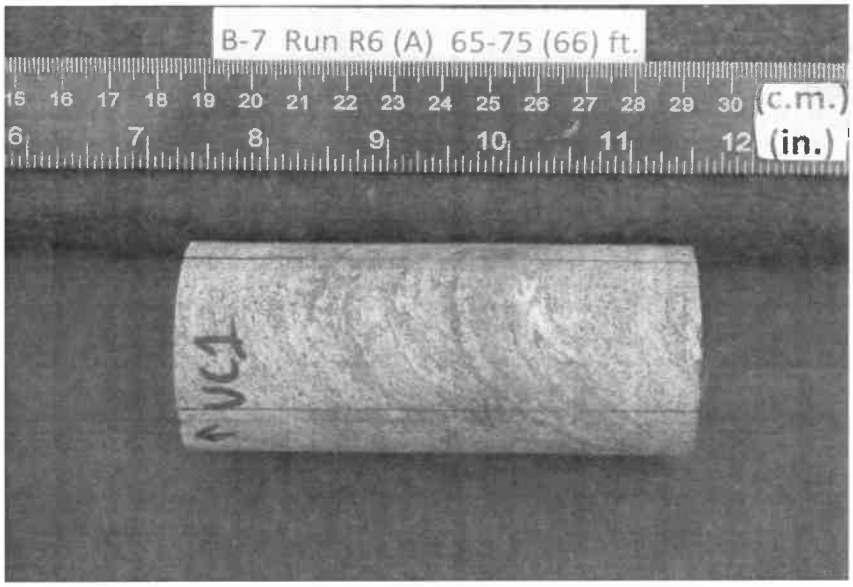
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00040	1.990	0.00020	0.012	YES
Diameter 2, in (rotated 90°)	0.00180	1.990	0.00090	0.052	YES
END 2					
Diameter 1, in	0.00040	1.990	0.00020	0.012	YES
Diameter 2, in (rotated 90°)	0.00180	1.990	0.00090	0.052	YES

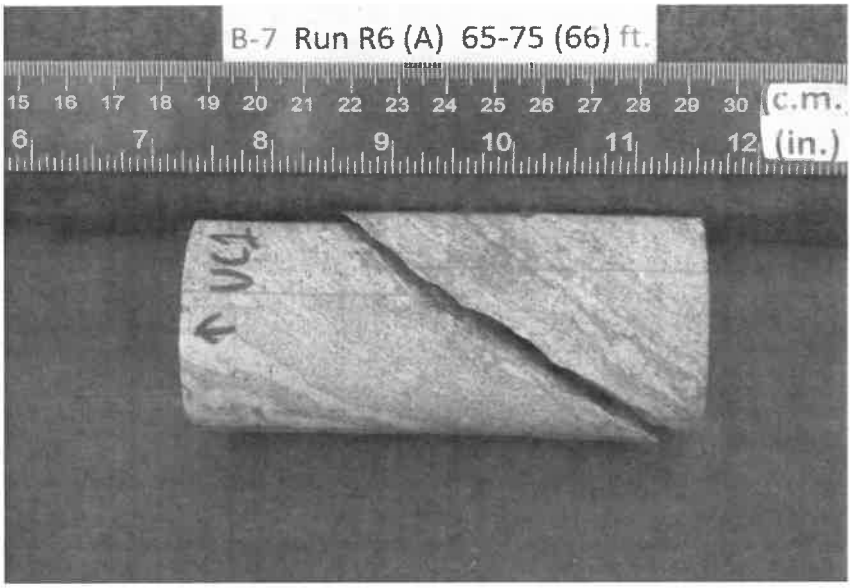
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-7
Sample ID:	Run R6 (A)
Depth, ft:	65-75 (66)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/6/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-7		
Sample ID:	Run R6 (B)		
Depth:	65-75 (69) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.45	4.45	4.45
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	614.87		
Bulk Density, lb/ft^3	169		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

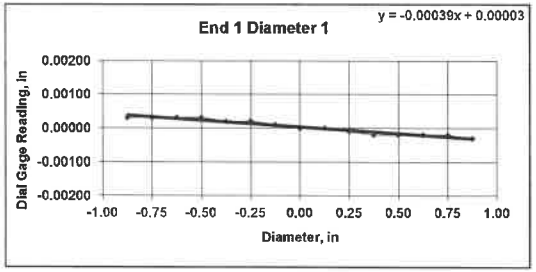
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00030	0.00030	0.00030	0.00030	0.00020	0.00020	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00020	-0.00020	-0.00020	-0.00030
Diameter 2, in (rotated 90°)	-0.00100	-0.00100	-0.00090	-0.00060	-0.00050	-0.00030	-0.00010	0.00000	0.00020	0.00030	0.00040	0.00050	0.00050	0.00060	0.00060

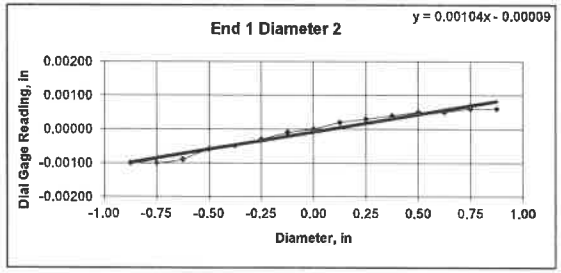
Difference between max and min readings, in: 0° = 0.00060 90° = 0.00160

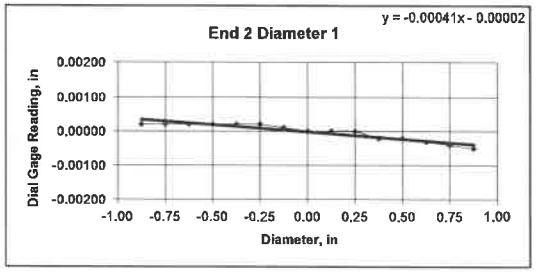
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00010	0.00000	0.00000	0.00000	-0.00020	-0.00020	-0.00030	-0.00040	-0.00050
Diameter 2, in (rotated 90°)	-0.00100	-0.00100	-0.00080	-0.00060	-0.00050	-0.00030	-0.00020	0.00000	0.00000	0.00020	0.00030	0.00040	0.00050	0.00050	0.00060

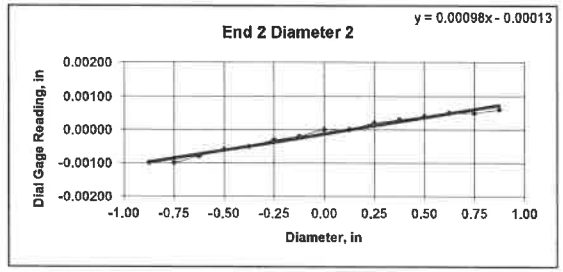
Difference between max and min readings, in: 0° = 0.0007 90° = 0.0016

Maximum difference must be < 0.0020 in. Difference = ± 0.00080
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00039
Angle of Best Fit Line: -0.02235

End 2:
Slope of Best Fit Line -0.00041
Angle of Best Fit Line: -0.02349

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00104
Angle of Best Fit Line: 0.05959

End 2:
Slope of Best Fit Line 0.00098
Angle of Best Fit Line: 0.05615

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

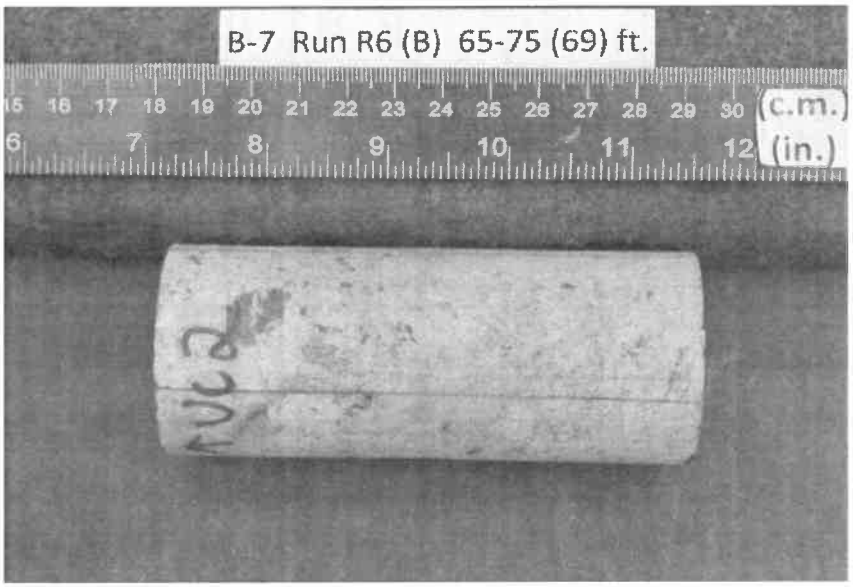
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00060	1.990	0.00030	0.017	YES
Diameter 2, in (rotated 90°)	0.00160	1.990	0.00080	0.046	YES
END 2					
Diameter 1, in	0.00070	1.990	0.00035	0.020	YES
Diameter 2, in (rotated 90°)	0.00160	1.990	0.00080	0.046	YES

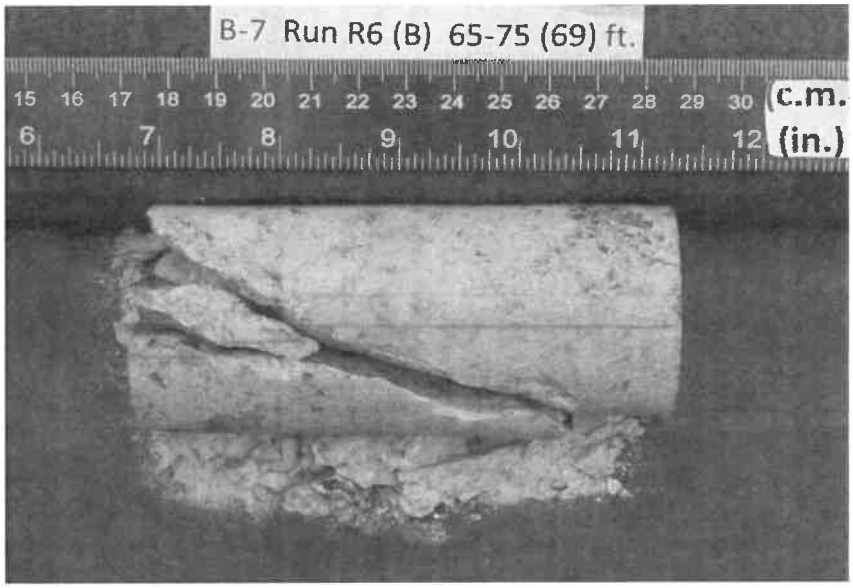
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-7
Sample ID:	Run R6 (B)
Depth, ft:	65-75 (69)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/6/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-7		
Sample ID:	Run R7		
Depth:	75-85 (83) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.27	4.27	4.27
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	622.45		
Bulk Density, lb/ft³	178		
Length to Diameter Ratio:	2.1	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

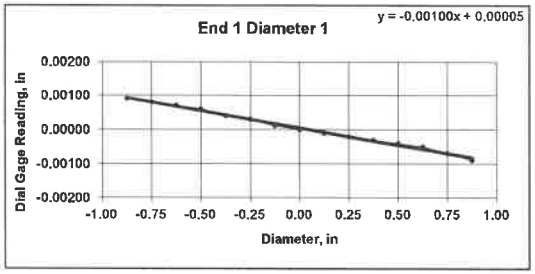
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00090	0.00080	0.00070	0.00060	0.00040	0.00030	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00070	-0.00090
Diameter 2, in (rotated 90°)	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020	-0.00020

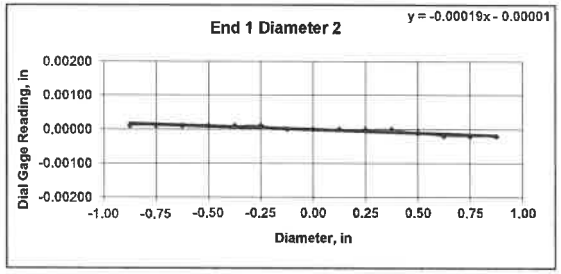
Difference between max and min readings, in: 0° = 0.00180 90° = 0.00030

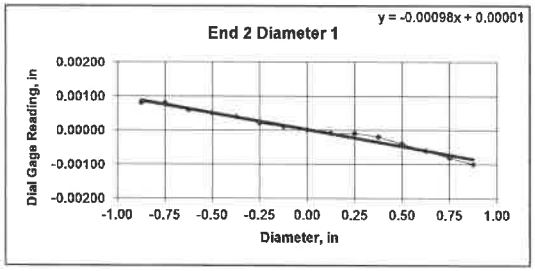
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00080	0.00080	0.00060	0.00050	0.00040	0.00020	0.00010	0.00000	-0.00010	-0.00010	-0.00020	-0.00040	-0.00060	-0.00080	-0.00100
Diameter 2, in (rotated 90°)	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00010	-0.00020

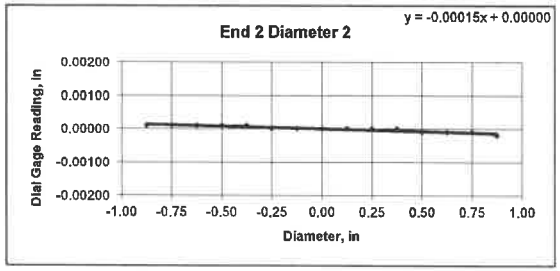
Difference between max and min readings, in: 0° = 0.0018 90° = 0.0003

Maximum difference must be < 0.0020 in. Difference = ± 0.00090
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00100
Angle of Best Fit Line: -0.05730

End 2:
Slope of Best Fit Line -0.00098
Angle of Best Fit Line: -0.05615

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00019
Angle of Best Fit Line: -0.01089

End 2:
Slope of Best Fit Line -0.00015
Angle of Best Fit Line: -0.00859

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

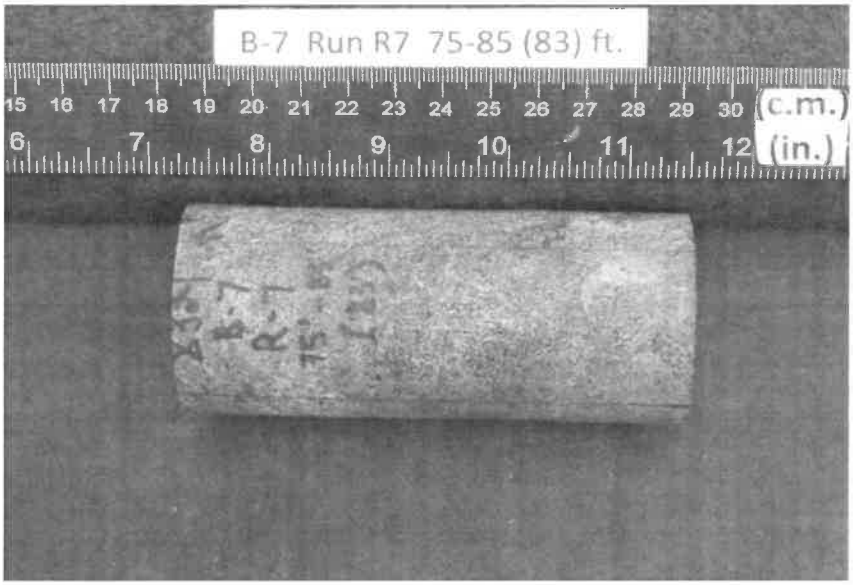
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00180	1.990	0.00090	0.052	YES
Diameter 2, in (rotated 90°)	0.00030	1.990	0.00015	0.009	YES
END 2					
Diameter 1, in	0.00180	1.990	0.00090	0.052	YES
Diameter 2, in (rotated 90°)	0.00030	1.990	0.00015	0.009	YES

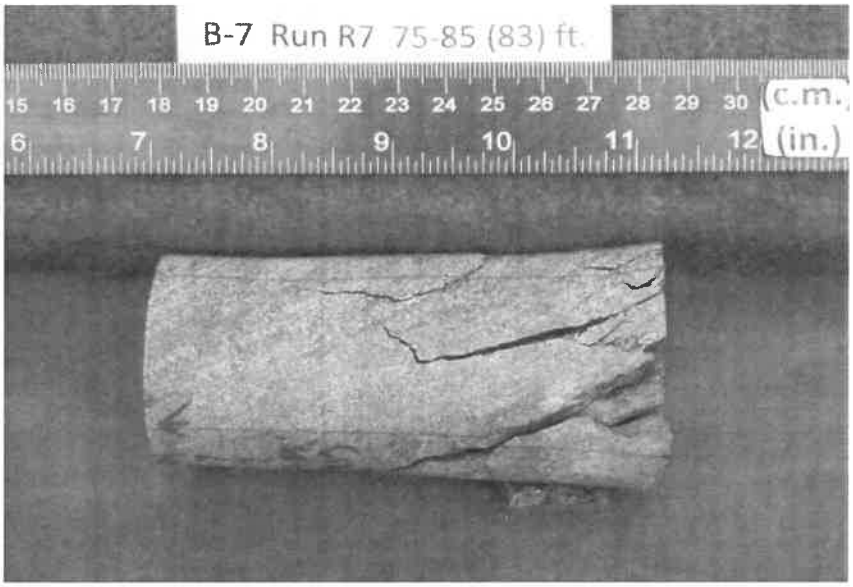
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-7
Sample ID:	Run R7
Depth, ft:	75-85 (83)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/7/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-7		
Sample ID:	Run R14		
Depth:	145-155 (153) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.39	4.39	4.39
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	598.55		
Bulk Density, lb/ft³	167		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

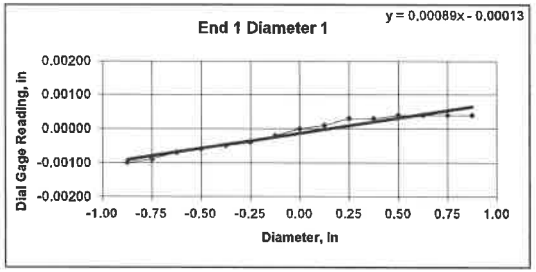
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00100	-0.00090	-0.00070	-0.00060	-0.00050	-0.00040	-0.00020	0.00000	0.00010	0.00030	0.00030	0.00040	0.00040	0.00040	0.00040
Diameter 2, in (rotated 90°)	0.00090	0.00090	0.00070	0.00050	0.00040	0.00030	0.00020	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00060

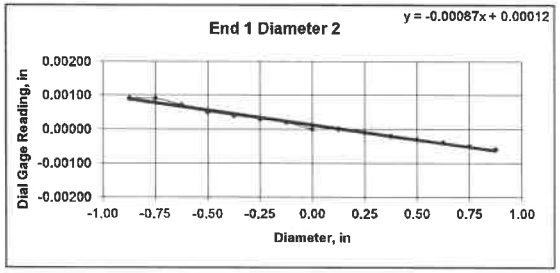
Difference between max and min readings, in: 0° = 0.00140 90° = 0.00150

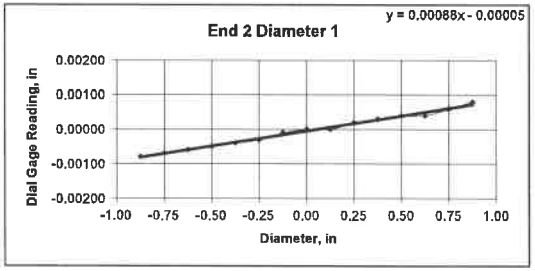
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00080	-0.00070	-0.00060	-0.00050	-0.00040	-0.00030	-0.00010	0.00000	0.00000	0.00020	0.00030	0.00040	0.00040	0.00060	0.00080
Diameter 2, in (rotated 90°)	0.00070	0.00070	0.00050	0.00040	0.00030	0.00010	0.00010	0.00000	-0.00010	-0.00020	-0.00050	-0.00050	-0.00060	-0.00080	-0.00090

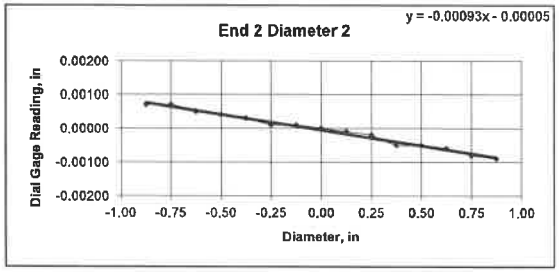
Difference between max and min readings, in: 0° = 0.0016 90° = 0.0016

Maximum difference must be < 0.0020 in. Difference = ± 0.00080
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00089
Angle of Best Fit Line: 0.05099

End 2:
Slope of Best Fit Line 0.00088
Angle of Best Fit Line: 0.05042

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00087
Angle of Best Fit Line: -0.04985

End 2:
Slope of Best Fit Line -0.00093
Angle of Best Fit Line: -0.05329

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

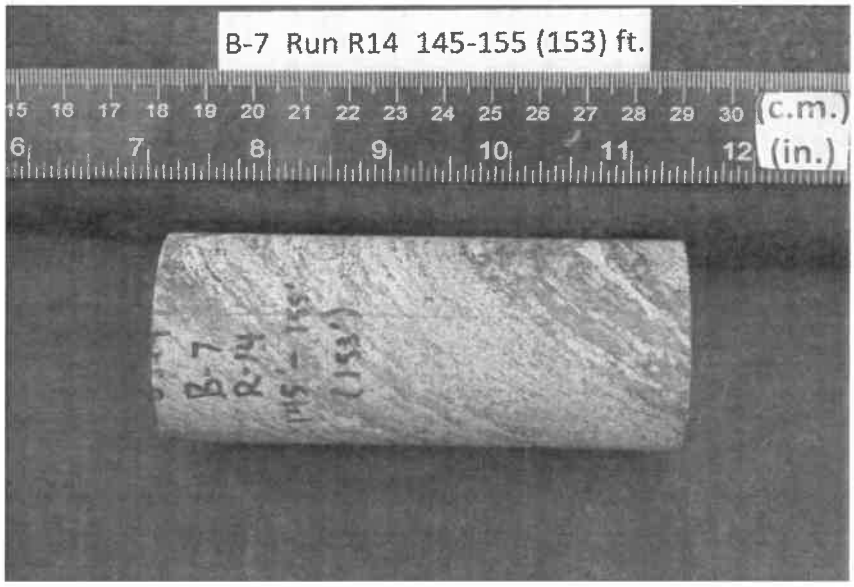
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00140	1.990	0.00070	0.040	YES
Diameter 2, in (rotated 90°)	0.00150	1.990	0.00075	0.043	YES
END 2					
Diameter 1, in	0.00160	1.990	0.00080	0.046	YES
Diameter 2, in (rotated 90°)	0.00160	1.990	0.00080	0.046	YES

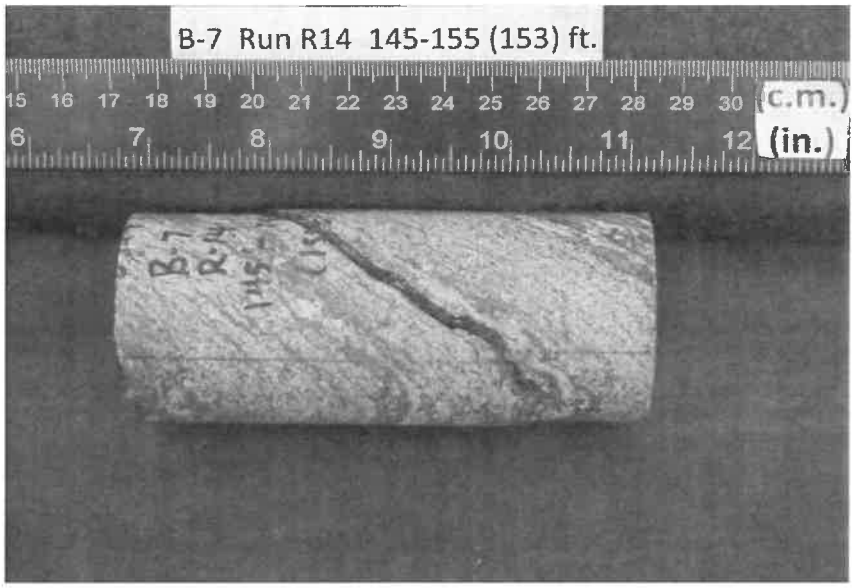
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-7
Sample ID:	Run R14
Depth, ft:	145-155 (153)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/7/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-7		
Sample ID:	Run R15		
Depth:	155-165 (155) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.31	4.31	4.31
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	586.33		
Bulk Density, lb/ft³	166		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

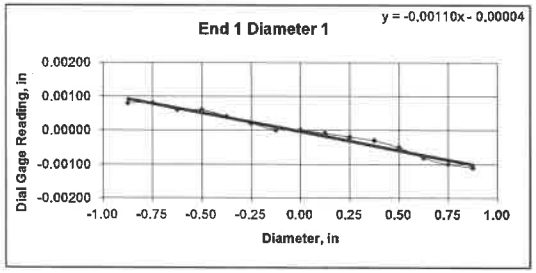
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00080	0.00080	0.00060	0.00060	0.00040	0.00020	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00050	-0.00080	-0.00100	-0.00110
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

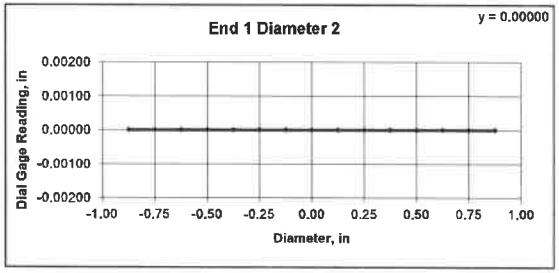
Difference between max and min readings, in: 0° = 0.00190 90° = 0.00000

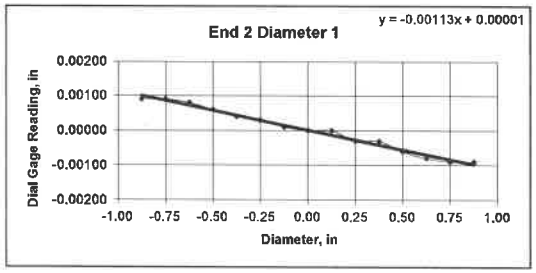
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00090	0.00090	0.00080	0.00060	0.00040	0.00030	0.00010	0.00000	0.00000	-0.00030	-0.00030	-0.00060	-0.00080	-0.00090	-0.00090
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010

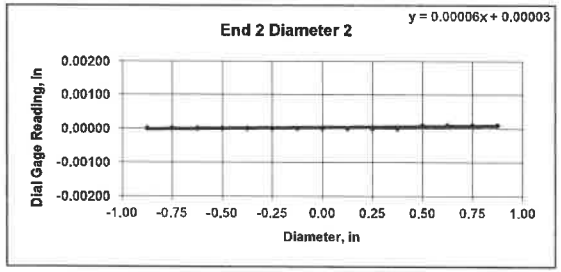
Difference between max and min readings, in: 0° = 0.0018 90° = 0.0001

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00110
Angle of Best Fit Line: -0.06303

End 2:
Slope of Best Fit Line: -0.00113
Angle of Best Fit Line: -0.06474

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: 0.00000
Angle of Best Fit Line: 0.00000

End 2:
Slope of Best Fit Line: 0.00006
Angle of Best Fit Line: 0.00344

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

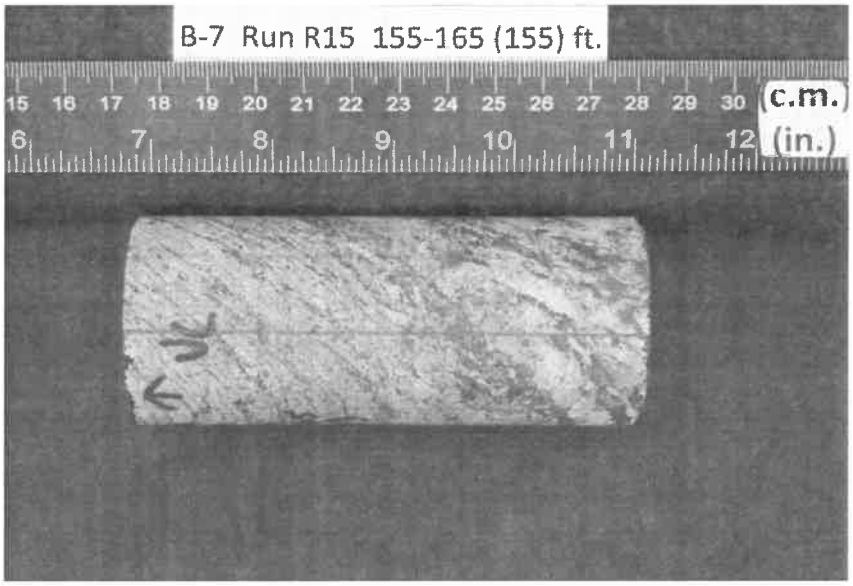
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00190	1.990	0.00095	0.055	YES
Diameter 2, in (rotated 90°)	0.00000	1.990	0.00000	0.000	YES
END 2					
Diameter 1, in	0.00180	1.990	0.00090	0.052	YES
Diameter 2, in (rotated 90°)	0.00010	1.990	0.00005	0.003	YES

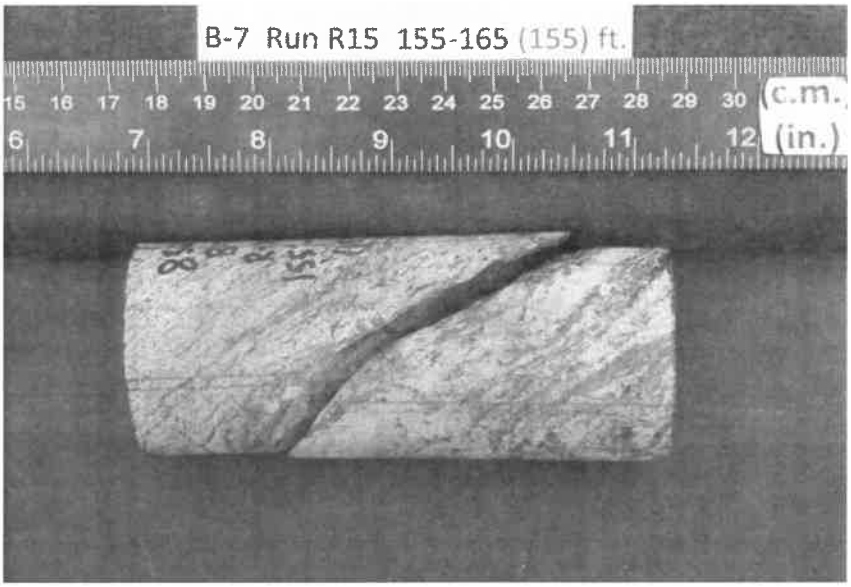
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-7
Sample ID:	Run R15
Depth, ft:	155-165 (155)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	06/29/12
Tested By:	daa
Checked By:	mpd

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-8	Run 4	48-58 (56)	163	17,804	1	YES
B-8	Run 5 (A)	58-68 (66)	167	1,924	1	NO *
B-8	Run 5 (B)	58-68 (66)	170	3,057	1	YES
B-8	Run 6	68-78 (68)	171	6,899	2	NO *
B-8	Run 11	118-128 (126)	168	17,930	1	NO *
B-8	Run 12	128-138 (128)	165	9,527	1	YES

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.
All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.
Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)
* The as-received core did not meet the ASTM side straightness tolerance.

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	6/28/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-8		
Sample ID:	Run 12		
Depth:	128-138 (128) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.38	4.38	4.38
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	593.02		
Bulk Density, lb/ft^3	165		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

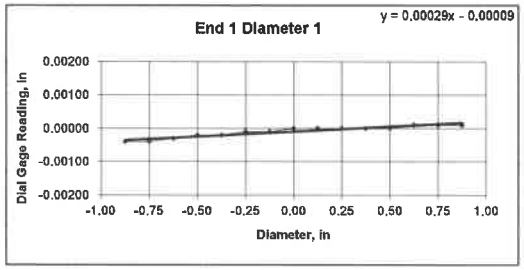
Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

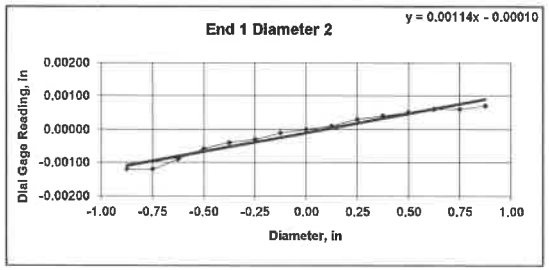
Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

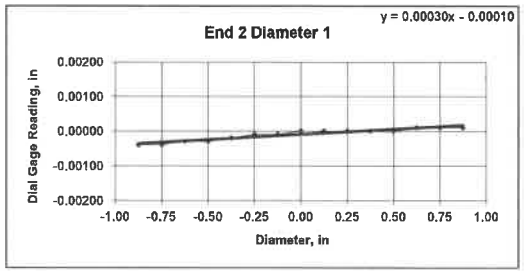
END FLATNESS AND PARALLELISM (Procedure FP1)

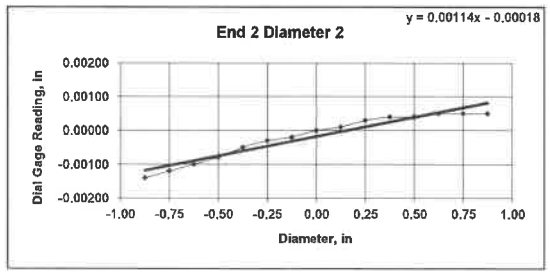
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00040	-0.00040	-0.00030	-0.00020	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010
Diameter 2, in (rotated 90°)	-0.00120	-0.00120	-0.00090	-0.00060	-0.00040	-0.00030	-0.00010	0.00000	0.00010	0.00030	0.00040	0.00050	0.00060	0.00060	0.00070
											Difference between max and min readings, in:				
											0° = 0.00050		90° = 0.00190		
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00040	-0.00040	-0.00030	-0.00030	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010
Diameter 2, in (rotated 90°)	-0.00140	-0.00120	-0.00100	-0.00080	-0.00050	-0.00030	-0.00020	0.00000	0.00010	0.00030	0.00040	0.00040	0.00050	0.00050	0.00050
											Difference between max and min readings, in:				
											0° = 0.0005		90° = 0.0019		

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00029
Angle of Best Fit Line: 0.01662

End 2:
Slope of Best Fit Line 0.00030
Angle of Best Fit Line: 0.01719

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00114
Angle of Best Fit Line: 0.06532

End 2:
Slope of Best Fit Line 0.00114
Angle of Best Fit Line: 0.06532

Maximum Angular Difference: 0.00000

Parallelism Tolerance Met? **YES**
Spherically Seated

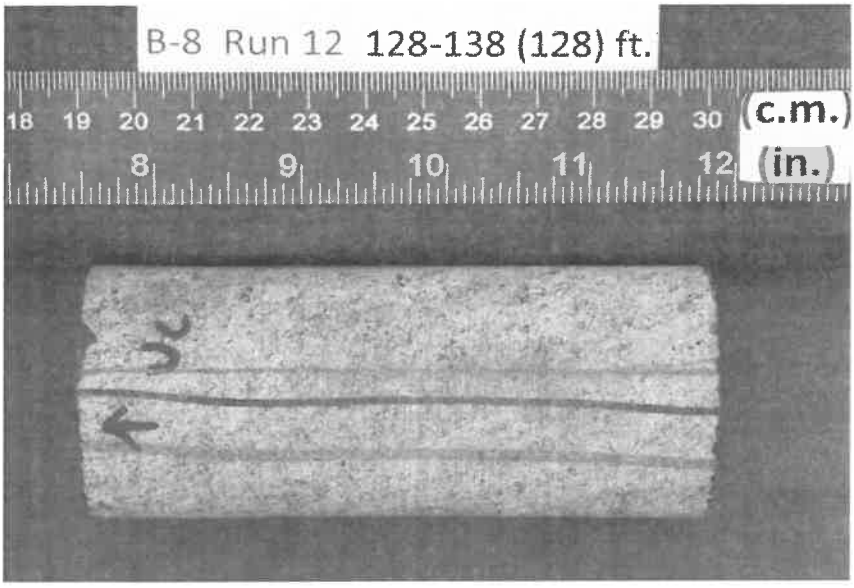
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00050	1.990	0.00025	0.014	YES
Diameter 2, in (rotated 90°)	0.00190	1.990	0.00095	0.055	YES
END 2					
Diameter 1, in	0.00050	1.990	0.00025	0.014	YES
Diameter 2, in (rotated 90°)	0.00190	1.990	0.00095	0.055	YES

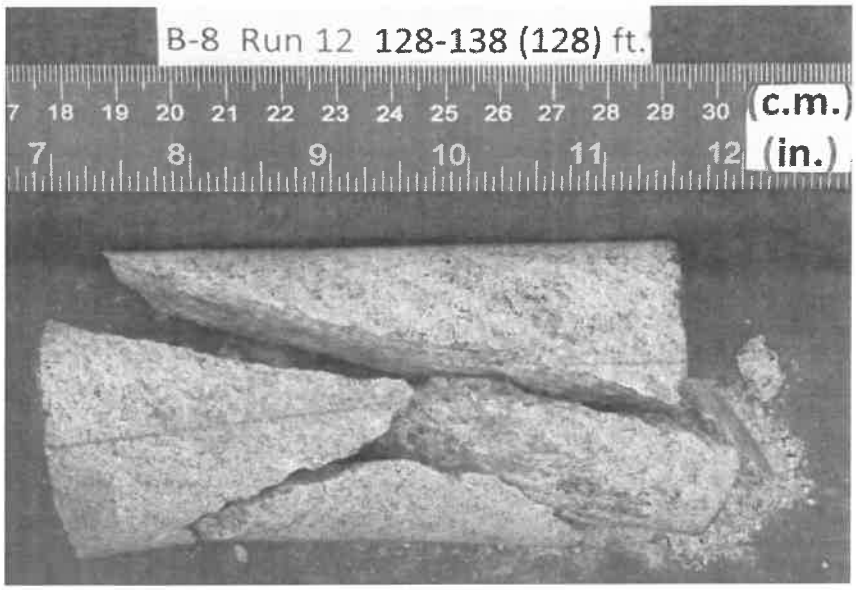
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	6/29/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-8
Sample ID:	Run 12
Depth, ft:	128-138 (128)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	6/28/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-8		
Sample ID:	Run 4		
Depth:	48-58 (56) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.37	4.38	4.38
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	584.44		
Bulk Density, lb/ft³	163		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

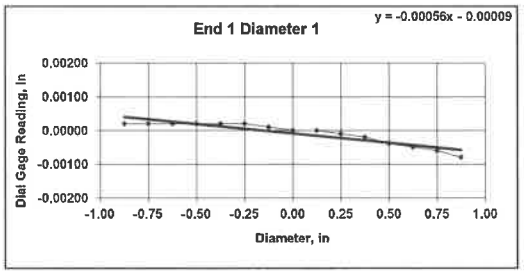
Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

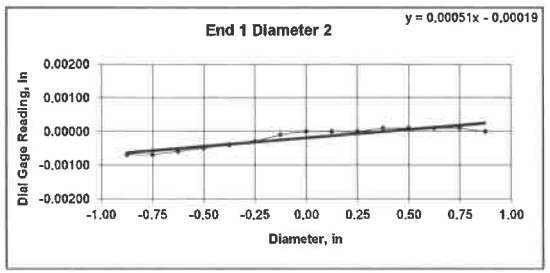
Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

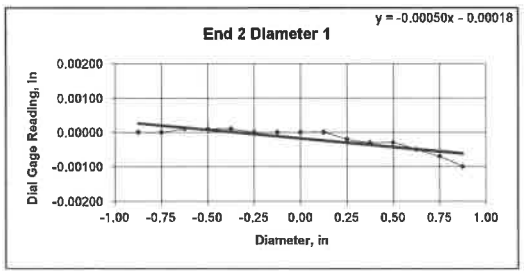
END FLATNESS AND PARALLELISM (Procedure FP1)

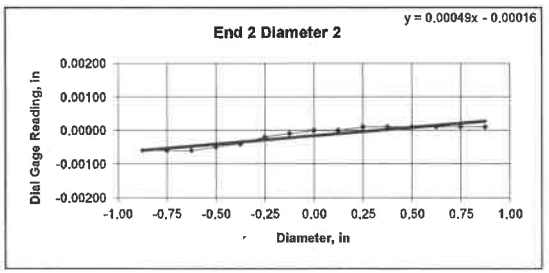
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00040	-0.00050	-0.00060	-0.00080
Diameter 2, in (rotated 90°)	-0.00070	-0.00070	-0.00060	-0.00050	-0.00040	-0.00030	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010	0.00000
											Difference between max and min readings, in:				
											0° = 0.00100		90° = 0.00080		
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	-0.00020	-0.00030	-0.00030	-0.00050	-0.00070	-0.00100
Diameter 2, in (rotated 90°)	-0.00060	-0.00060	-0.00060	-0.00050	-0.00040	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010
											Difference between max and min readings, in:				
											0° = 0.0011		90° = 0.0007		

Maximum difference must be < 0.0020 in. Difference = ± 0.00055
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00056
Angle of Best Fit Line: -0.03209

End 2:
Slope of Best Fit Line: -0.00050
Angle of Best Fit Line: -0.02865

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: 0.00051
Angle of Best Fit Line: 0.02922

End 2:
Slope of Best Fit Line: 0.00049
Angle of Best Fit Line: 0.02807

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

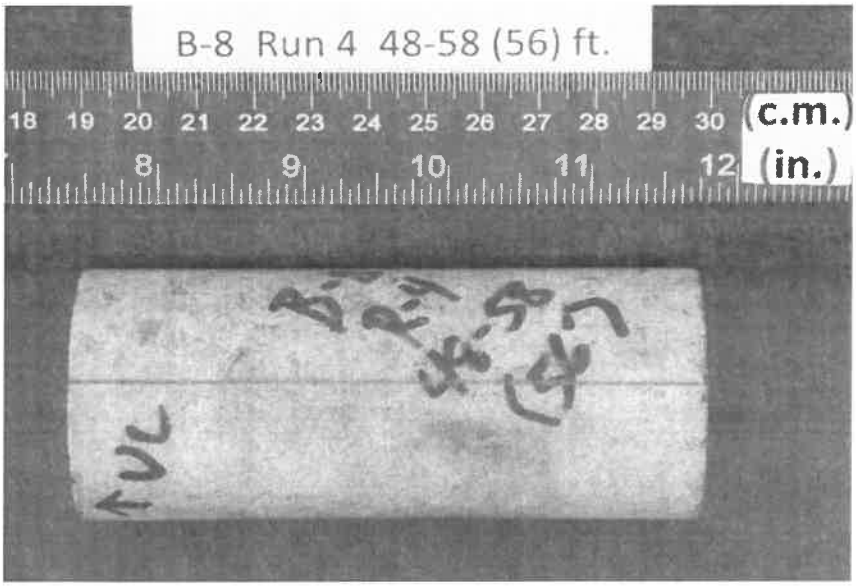
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00100	1.990	0.00050	0.029	YES
Diameter 2, in (rotated 90°)	0.00080	1.990	0.00040	0.023	YES
END 2					
Diameter 1, in	0.00110	1.990	0.00055	0.032	YES
Diameter 2, in (rotated 90°)	0.00070	1.990	0.00035	0.020	YES

Maximum angle of departure must be ≤ 0.25°

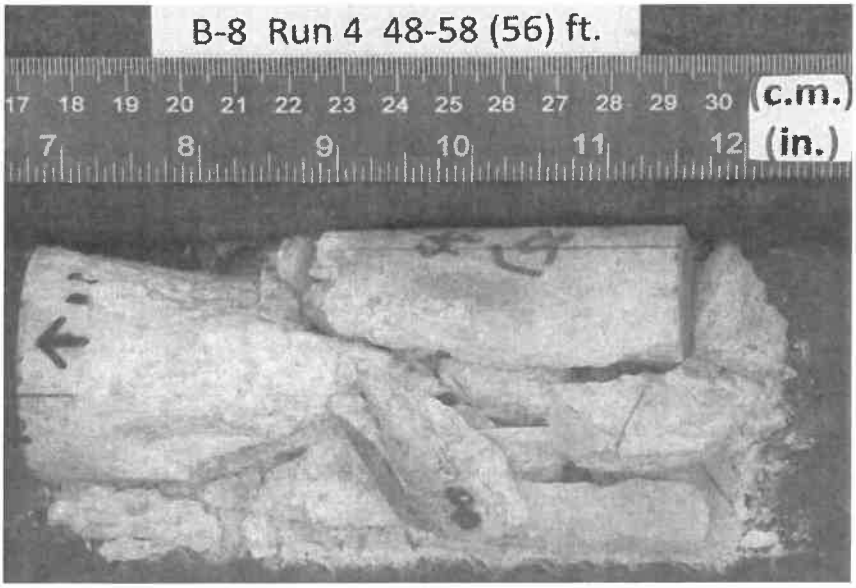
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	6/29/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-8
Sample ID:	Run 4
Depth, ft:	48-58 (56)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	6/28/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-8		
Sample ID:	Run 5 (A)		
Depth:	58-68 (66) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.34	4.34	4.34
Specimen Diameter, in:	1.98	1.99	1.99
Specimen Mass, g:	591.12		
Bulk Density, lb/ft^3	167		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

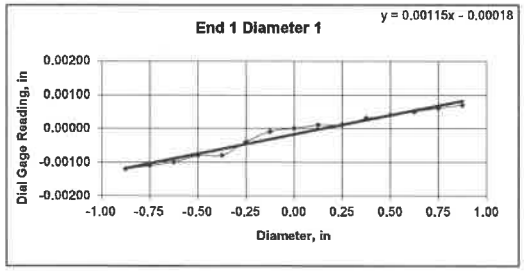
Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

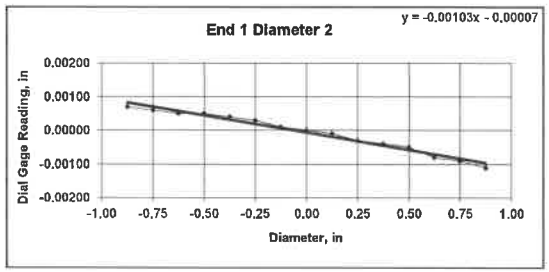
Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

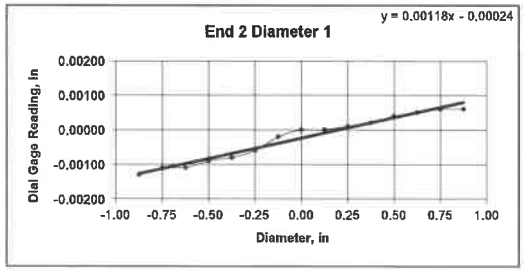
END FLATNESS AND PARALLELISM (Procedure FP1)

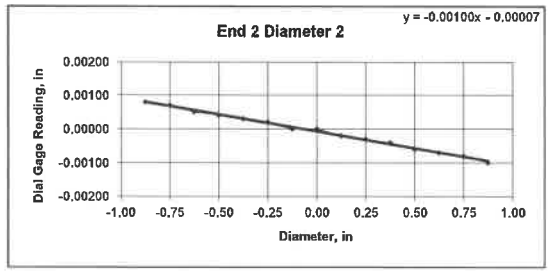
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00120	-0.00110	-0.00100	-0.00080	-0.00080	-0.00040	-0.00010	0.00000	0.00010	0.00010	0.00030	0.00040	0.00050	0.00060	0.00070
Diameter 2, in (rotated 90°)	0.00070	0.00060	0.00050	0.00050	0.00040	0.00030	0.00010	0.00000	-0.00010	-0.00030	-0.00040	-0.00050	-0.00080	-0.00090	-0.00110
											Difference between max and min readings, in:				
											0° = 0.00190		90° = 0.00180		
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00130	-0.00110	-0.00110	-0.00090	-0.00080	-0.00060	-0.00020	0.00000	0.00000	0.00010	0.00020	0.00040	0.00050	0.00060	0.00060
Diameter 2, in (rotated 90°)	0.00080	0.00070	0.00050	0.00040	0.00030	0.00020	0.00000	0.00000	-0.00020	-0.00030	-0.00040	-0.00060	-0.00070	-0.00080	-0.00100
											Difference between max and min readings, in:				
											0° = 0.0019		90° = 0.0018		

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: 0.00115
Angle of Best Fit Line: 0.06589

End 2:
Slope of Best Fit Line: 0.00118
Angle of Best Fit Line: 0.06761

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: -0.00103
Angle of Best Fit Line: -0.05901

End 2:
Slope of Best Fit Line: -0.00100
Angle of Best Fit Line: -0.05730

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

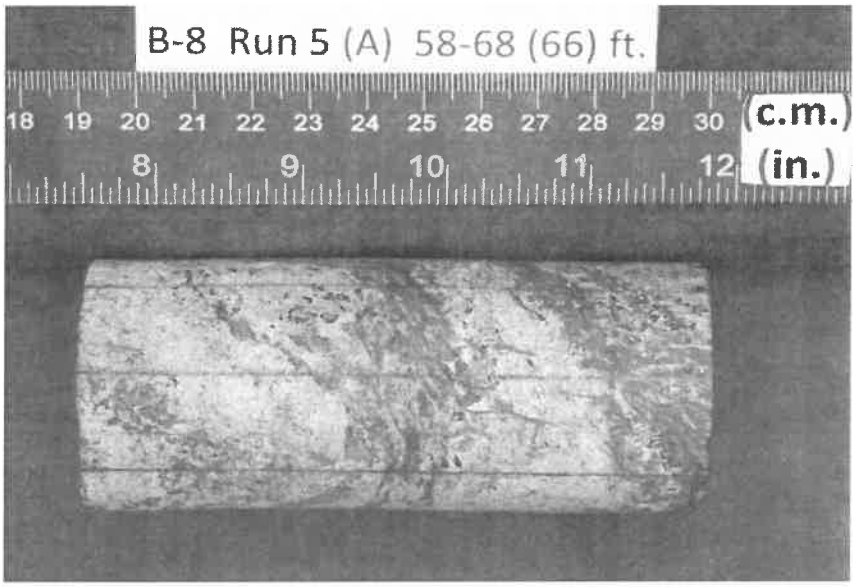
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00190	1.985	0.00096	0.055	YES
Diameter 2, in (rotated 90°)	0.00180	1.985	0.00091	0.052	YES
END 2					
Diameter 1, in	0.00190	1.985	0.00096	0.055	YES
Diameter 2, in (rotated 90°)	0.00180	1.985	0.00091	0.052	YES

Maximum angle of departure must be ≤ 0.25°

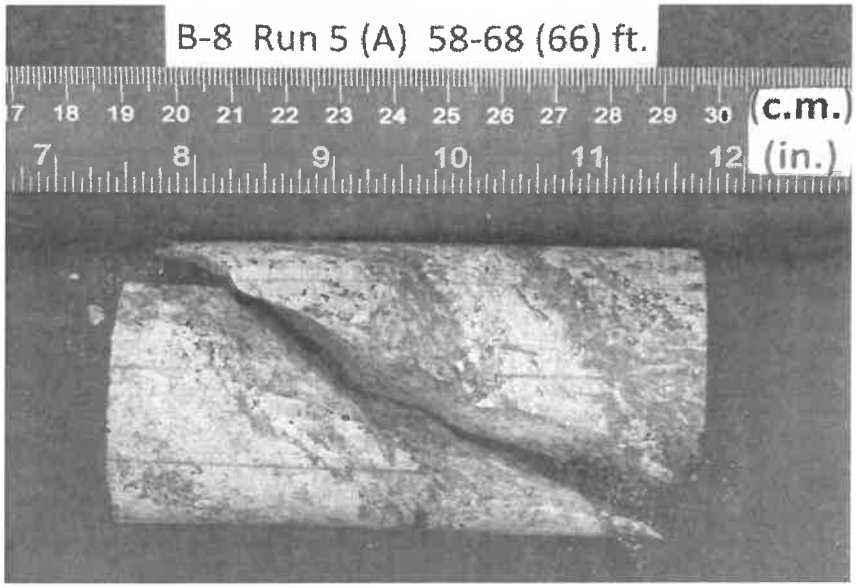
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	6/29/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-8
Sample ID:	Run 5 (A)
Depth, ft:	58-68 (66)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	6/28/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-8		
Sample ID:	Run 5 (B)		
Depth:	58-68 (66) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.39	4.39	4.39
Specimen Diameter, in:	1.98	1.99	1.99
Specimen Mass, g:	608.51		
Bulk Density, lb/ft³	170		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

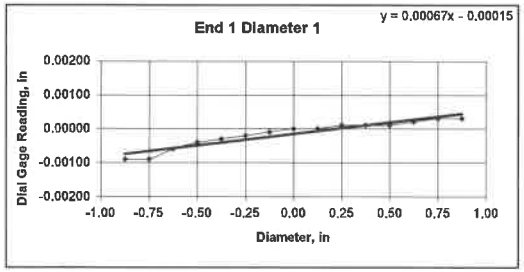
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00090	-0.00090	-0.00060	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00010	0.00010	0.00020	0.00030	0.00030
Diameter 2, in (rotated 90°)	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	-0.00010	-0.00020	-0.00020	-0.00020	-0.00040	-0.00050	-0.00050

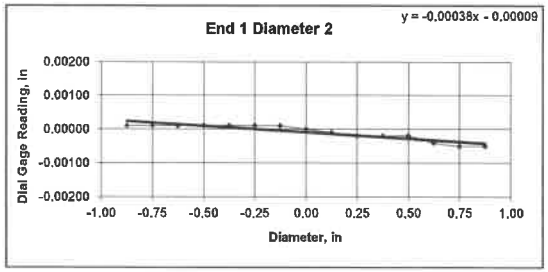
Difference between max and min readings, in:
0° = 0.00120 90° = 0.00060

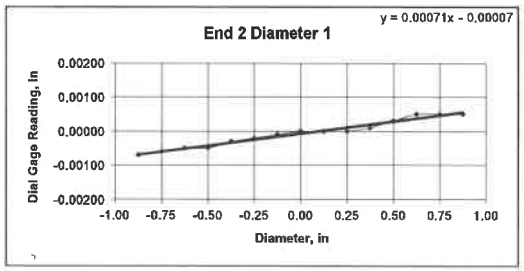
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00070	-0.00060	-0.00050	-0.00050	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00030	0.00050	0.00050	0.00050
Diameter 2, in (rotated 90°)	0.00010	0.00020	0.00020	0.00020	0.00020	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00030	-0.00040	-0.00050	-0.00060

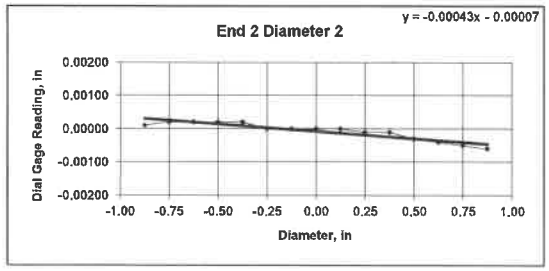
Difference between max and min readings, in:
0° = 0.0012 90° = 0.0008

Maximum difference must be < 0.0020 in. Difference = ± 0.00060
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00067
Angle of Best Fit Line: 0.03839

End 2:
Slope of Best Fit Line 0.00071
Angle of Best Fit Line: 0.04068

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00038
Angle of Best Fit Line: -0.02177

End 2:
Slope of Best Fit Line -0.00043
Angle of Best Fit Line: -0.02464

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

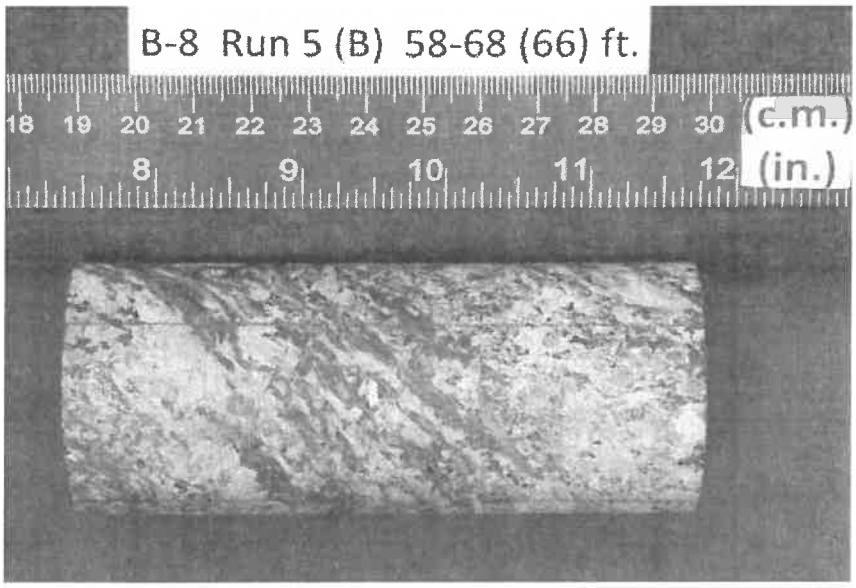
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00120	1.985	0.00060	0.035	YES
Diameter 2, in (rotated 90°)	0.00060	1.985	0.00030	0.017	YES
END 2					
Diameter 1, in	0.00120	1.985	0.00060	0.035	YES
Diameter 2, in (rotated 90°)	0.00080	1.985	0.00040	0.023	YES

Maximum angle of departure must be ≤ 0.25°

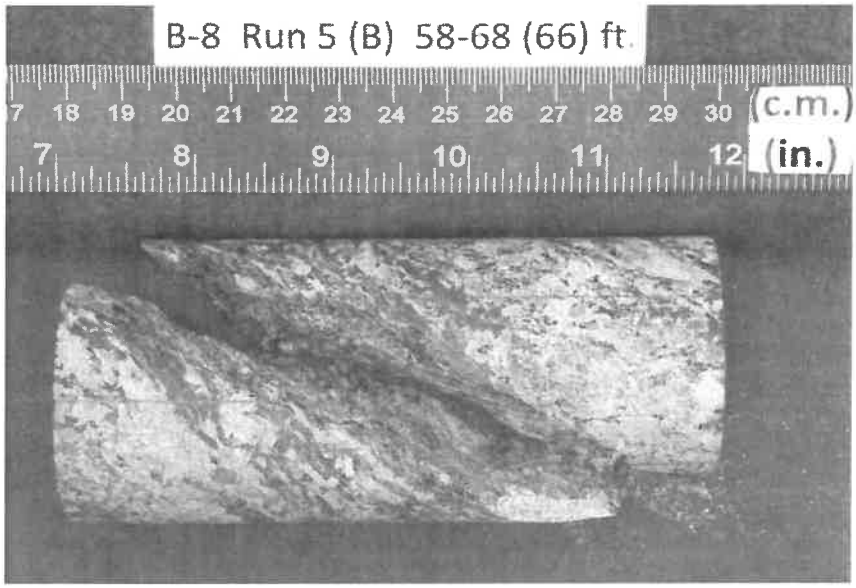
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	6/29/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-8
Sample ID:	Run 5 (B)
Depth, ft:	58-68 (66)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	6/28/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-8		
Sample ID:	Run 6		
Depth:	68-78 (68) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.20	4.20	4.20
Specimen Diameter, in:	1.98	1.99	1.99
Specimen Mass, g:	586.16		
Bulk Density, lb/ft³	171		
Length to Diameter Ratio:	2.1	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:

Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.

Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00040	-0.00040	-0.00040	-0.00030	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010	0.00010
Diameter 2, in (rotated 90°)	-0.00110	-0.00100	-0.00090	-0.00070	-0.00040	-0.00030	-0.00010	0.00000	0.00010	0.00030	0.00040	0.00050	0.00070	0.00070	0.00080

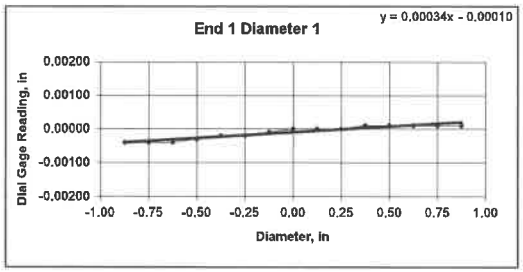
Difference between max and min readings, in: 0° = 0.00050, 90° = 0.00190

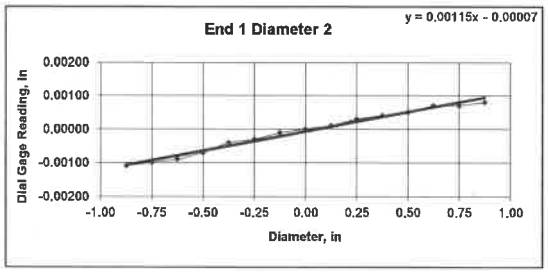
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00050	-0.00050	-0.00040	-0.00040	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010
Diameter 2, in (rotated 90°)	-0.00110	-0.00100	-0.00090	-0.00060	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00020	0.00040	0.00050	0.00070	0.00080	0.00080

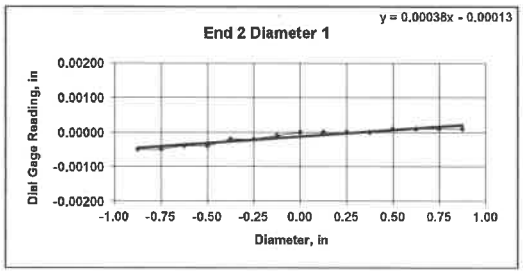
Difference between max and min readings, in: 0° = 0.0006, 90° = 0.0019

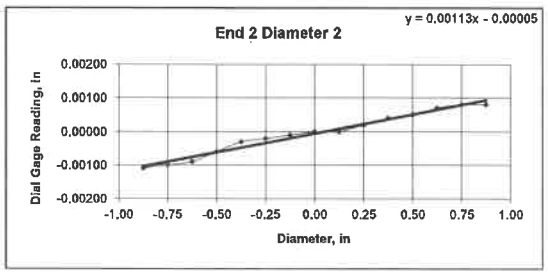
Maximum difference must be < 0.0020 in. Difference = ± 0.00095

Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
- Slope of Best Fit Line: 0.00034
- Angle of Best Fit Line: 0.01948

End 2:
- Slope of Best Fit Line: 0.00038
- Angle of Best Fit Line: 0.02177

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**

Spherically Seated

DIAMETER 2

End 1:
- Slope of Best Fit Line: 0.00115
- Angle of Best Fit Line: 0.06589

End 2:
- Slope of Best Fit Line: 0.00113
- Angle of Best Fit Line: 0.06474

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**

Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

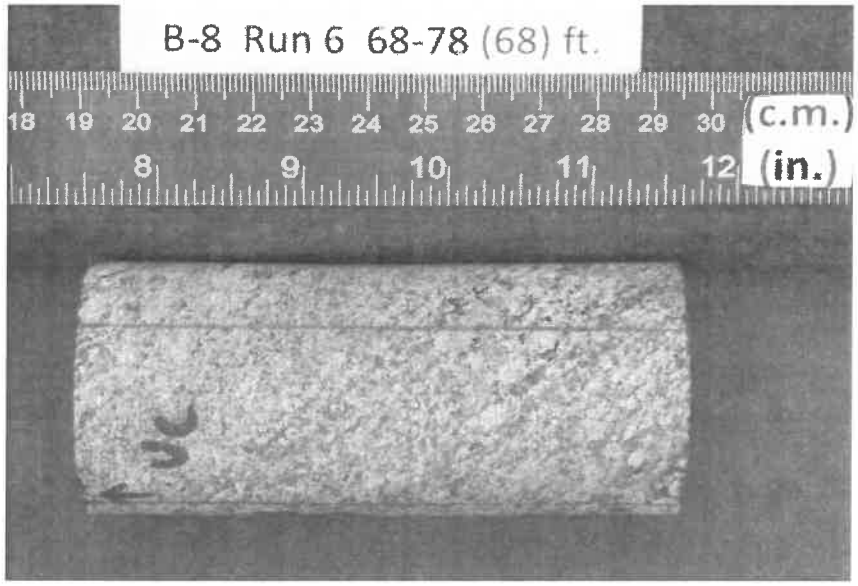
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00050	1.985	0.00025	0.014	YES
Diameter 2, in (rotated 90°)	0.00190	1.985	0.00096	0.055	YES
END 2					
Diameter 1, in	0.00060	1.985	0.00030	0.017	YES
Diameter 2, in (rotated 90°)	0.00190	1.985	0.00096	0.055	YES

Maximum angle of departure must be ≤ 0.25°

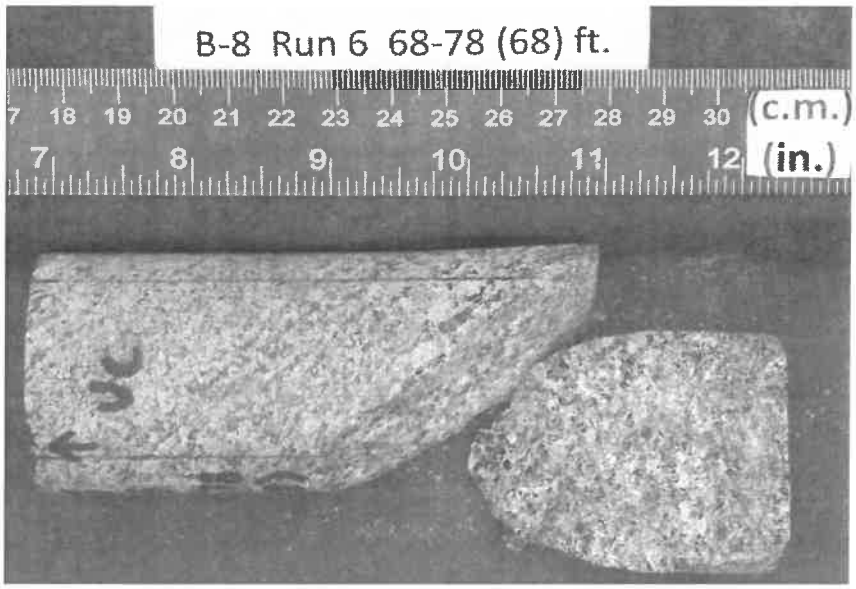
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	6/29/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-8
Sample ID:	Run 6
Depth, ft:	68-78 (68)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	6/28/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-8		
Sample ID:	Run 11		
Depth:	118-128 (126) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.00	4.00	4.00
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	548.83		
Bulk Density, lb/ft^3	168		
Length to Diameter Ratio:	2.0	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

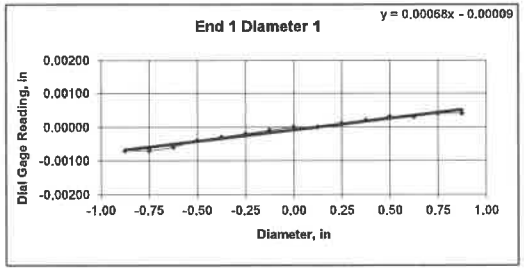
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00070	-0.00070	-0.00060	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00020	0.00030	0.00030	0.00040	0.00040
Diameter 2, in (rotated 90°)	-0.00110	-0.00100	-0.00070	-0.00050	-0.00040	-0.00030	-0.00010	0.00000	0.00020	0.00030	0.00040	0.00050	0.00060	0.00070	0.00080

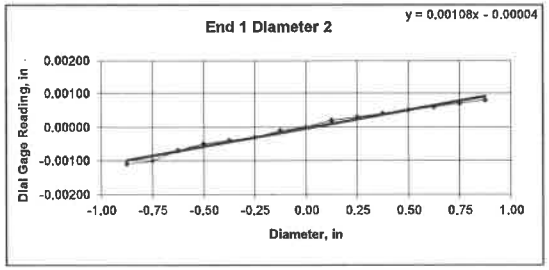
Difference between max and min readings, in:
0° = 0.00110 90° = 0.00190

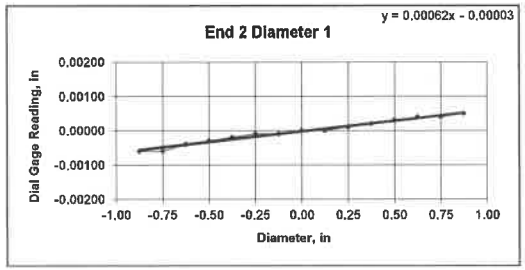
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00060	-0.00060	-0.00040	-0.00030	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00010	0.00020	0.00030	0.00040	0.00040	0.00050
Diameter 2, in (rotated 90°)	-0.00130	-0.00120	-0.00070	-0.00060	-0.00040	-0.00020	-0.00010	0.00000	0.00010	0.00020	0.00030	0.00040	0.00050	0.00050	0.00060

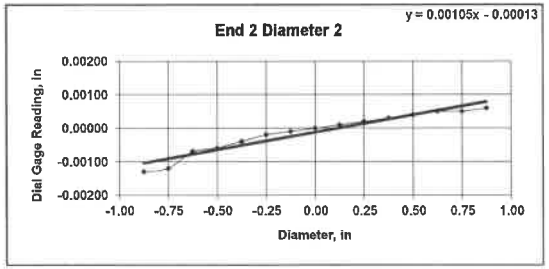
Difference between max and min readings, in:
0° = 0.0011 90° = 0.0019

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00068
Angle of Best Fit Line: 0.03896

End 2:
Slope of Best Fit Line 0.00062
Angle of Best Fit Line: 0.03552

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00108
Angle of Best Fit Line: 0.06188

End 2:
Slope of Best Fit Line 0.00105
Angle of Best Fit Line: 0.06016

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

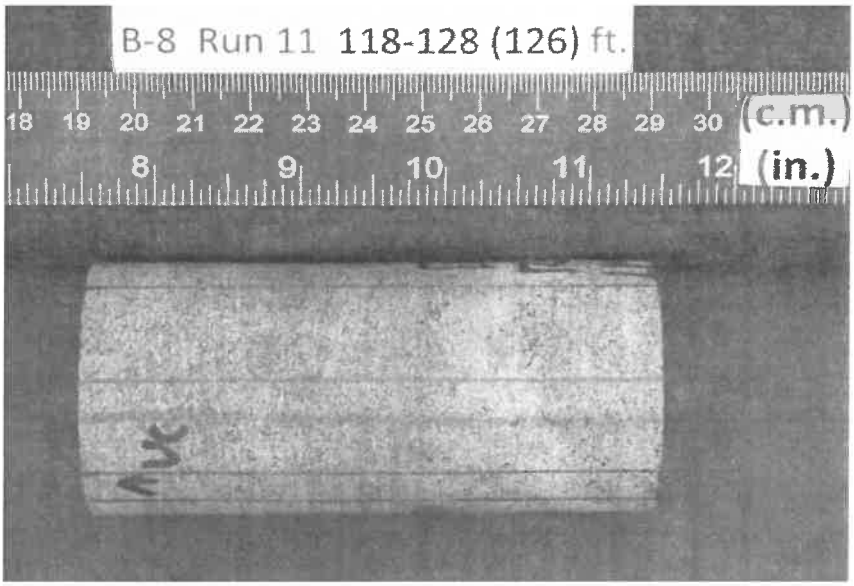
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00110	1.990	0.00055	0.032	YES
Diameter 2, in (rotated 90°)	0.00190	1.990	0.00095	0.055	YES
END 2					
Diameter 1, in	0.00110	1.990	0.00055	0.032	YES
Diameter 2, in (rotated 90°)	0.00190	1.990	0.00095	0.055	YES

Maximum angle of departure must be ≤ 0.25°

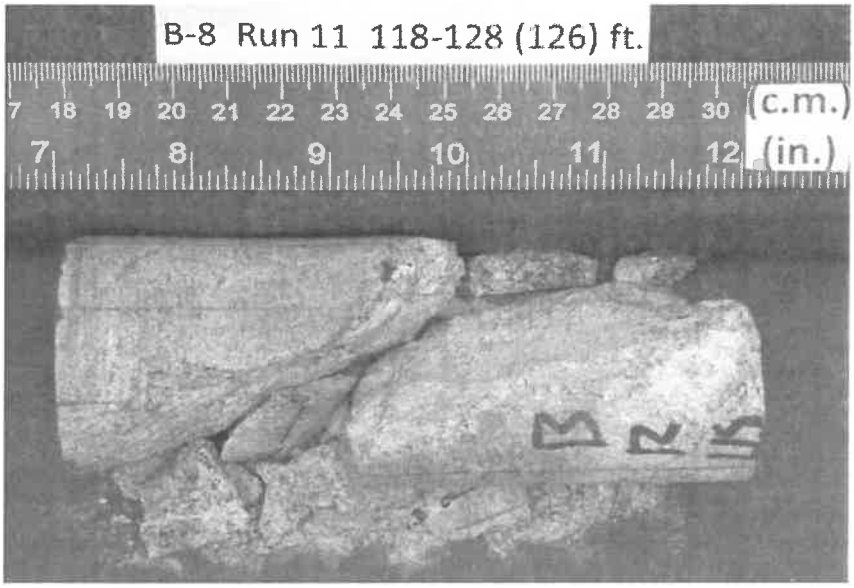
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	6/29/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-8
Sample ID:	Run 11
Depth, ft:	118-128 (126)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-9	Run R4	45-55 (53)	172	9,220	2	NO*
B-9	Run R5 (A)	55-65 (60)	171	10,435	1	NO*
B-9	Run R5 (B)	55-65 (63)	171	5,753	2	YES
B-9	Run R6 (A)	65-75 (72)	173	8,819	2	YES
B-9	Run R6 (B)	65-75 (73)	173	11,600	2	YES
B-9	Run R10	105-115 (109)	169	3,513	2	NO*

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.
All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.
Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)
* The as-received core did not meet the ASTM side straightness tolerance.

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/7/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-9		
Sample ID:	Run R4		
Depth:	45-55 (53) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.37	4.37	4.37
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	615.28		
Bulk Density, lb/ft³	172		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

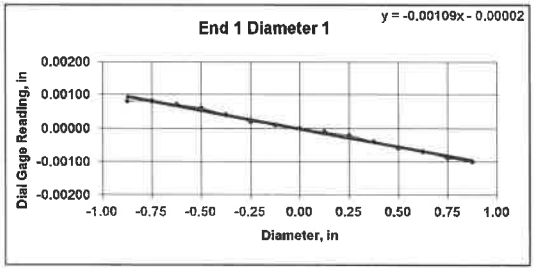
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00080	0.00080	0.00070	0.00060	0.00040	0.00020	0.00010	0.00000	-0.00010	-0.00020	-0.00040	-0.00060	-0.00070	-0.00090	-0.00100
Diameter 2, in (rotated 90°)	0.00100	0.00090	0.00080	0.00070	0.00050	0.00030	0.00010	0.00000	-0.00010	-0.00020	-0.00040	-0.00050	-0.00070	-0.00080	-0.00090

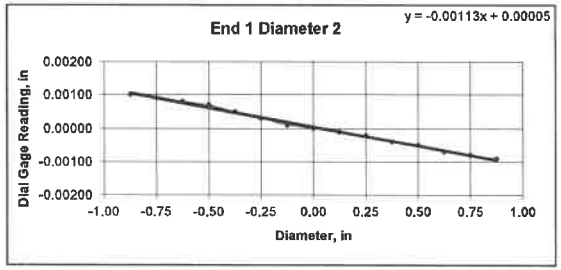
Difference between max and min readings, in: 0° = 0.00180 90° = 0.00190

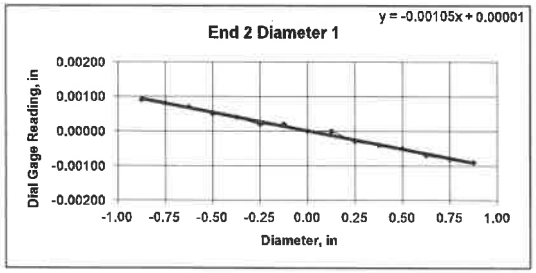
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00090	0.00080	0.00070	0.00050	0.00040	0.00020	0.00020	0.00000	0.00000	-0.00030	-0.00040	-0.00050	-0.00070	-0.00080	-0.00090
Diameter 2, in (rotated 90°)	0.00100	0.00100	0.00070	0.00060	0.00040	0.00020	0.00010	0.00000	-0.00020	-0.00030	-0.00040	-0.00060	-0.00070	-0.00080	-0.00090

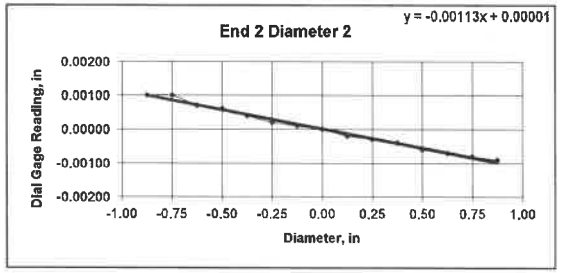
Difference between max and min readings, in: 0° = 0.0018 90° = 0.0019

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00109
Angle of Best Fit Line: -0.06245

End 2:
Slope of Best Fit Line -0.00105
Angle of Best Fit Line: -0.06016

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00113
Angle of Best Fit Line: -0.06474

End 2:
Slope of Best Fit Line -0.00113
Angle of Best Fit Line: -0.06474

Maximum Angular Difference: 0.00000

Parallelism Tolerance Met? **YES**
Spherically Seated

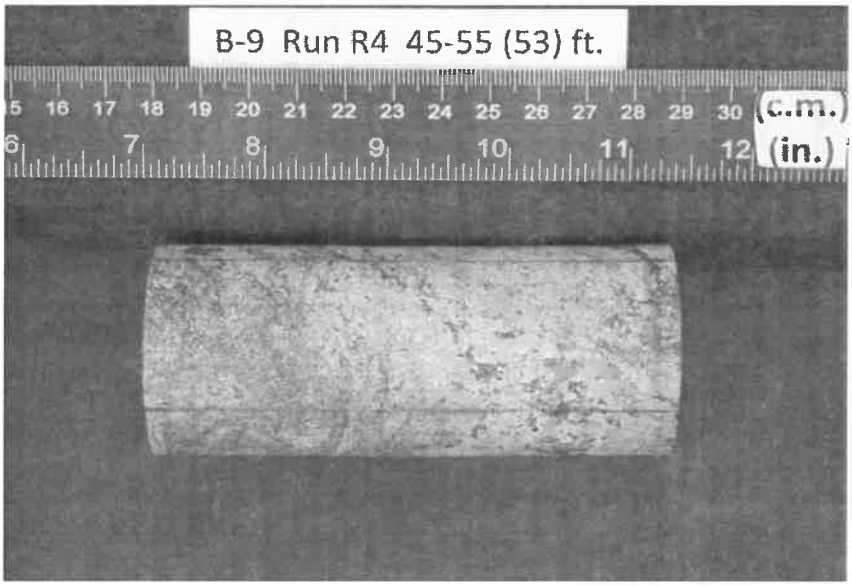
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00180	1.990	0.00090	0.052	YES
Diameter 2, in (rotated 90°)	0.00190	1.990	0.00095	0.055	YES
END 2					
Diameter 1, in	0.00180	1.990	0.00090	0.052	YES
Diameter 2, in (rotated 90°)	0.00190	1.990	0.00095	0.055	YES

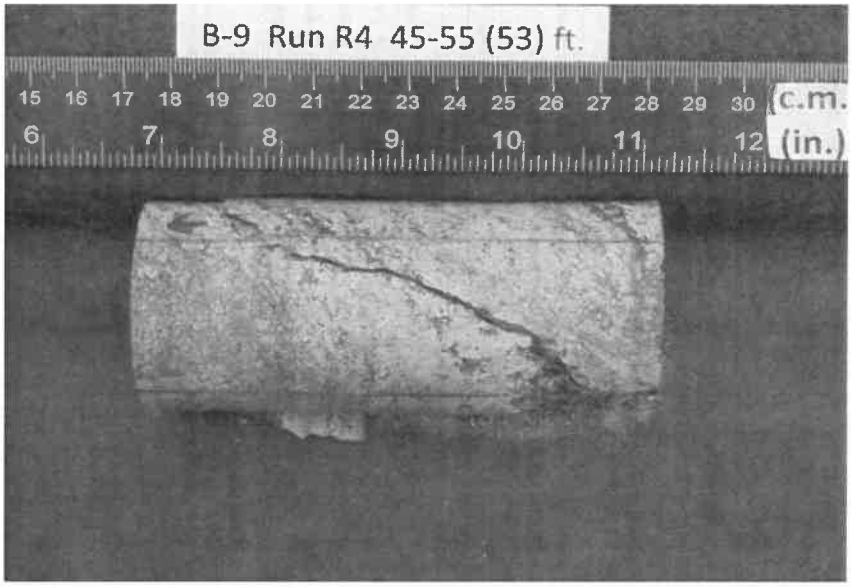
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-9
Sample ID:	Run R4
Depth, ft:	45-55 (53)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/6/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-9		
Sample ID:	Run R5 (A)		
Depth:	55-65 (60) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.28	4.28	4.28
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	600.29		
Bulk Density, lb/ft^3	171		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

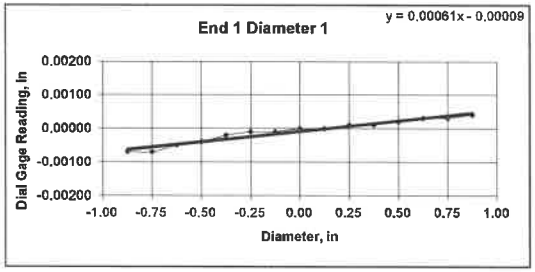
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00070	-0.00070	-0.00050	-0.00040	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00010	0.00010	0.00020	0.00030	0.00030	0.00040
Diameter 2, in (rotated 90°)	-0.00110	-0.00090	-0.00070	-0.00050	-0.00030	-0.00010	-0.00010	0.00000	0.00010	0.00020	0.00030	0.00050	0.00060	0.00070	0.00080

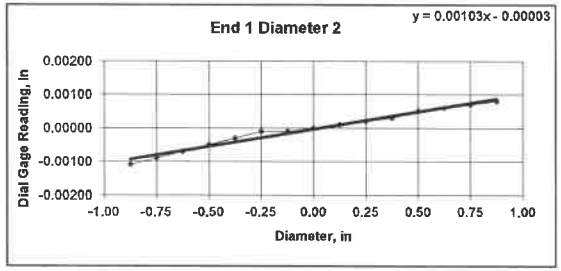
Difference between max and min readings, in: 0° = 0.00110 90° = 0.00190

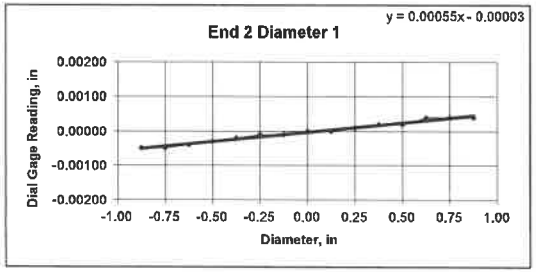
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00050	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00010	0.00020	0.00020	0.00040	0.00040	0.00040
Diameter 2, in (rotated 90°)	-0.00100	-0.00100	-0.00070	-0.00060	-0.00050	-0.00030	-0.00020	0.00000	0.00000	0.00020	0.00030	0.00040	0.00050	0.00050	0.00060

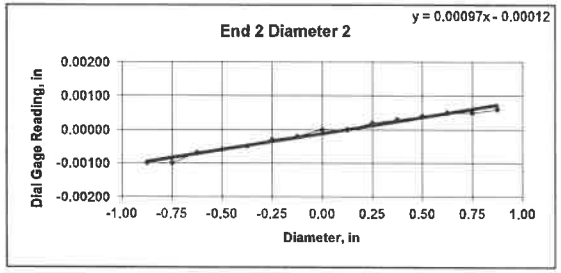
Difference between max and min readings, in: 0° = 0.0009 90° = 0.0016

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00061
Angle of Best Fit Line: 0.03495

End 2:
Slope of Best Fit Line 0.00055
Angle of Best Fit Line: 0.03151

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00103
Angle of Best Fit Line: 0.05901

End 2:
Slope of Best Fit Line 0.00097
Angle of Bast Fit Line: 0.05558

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

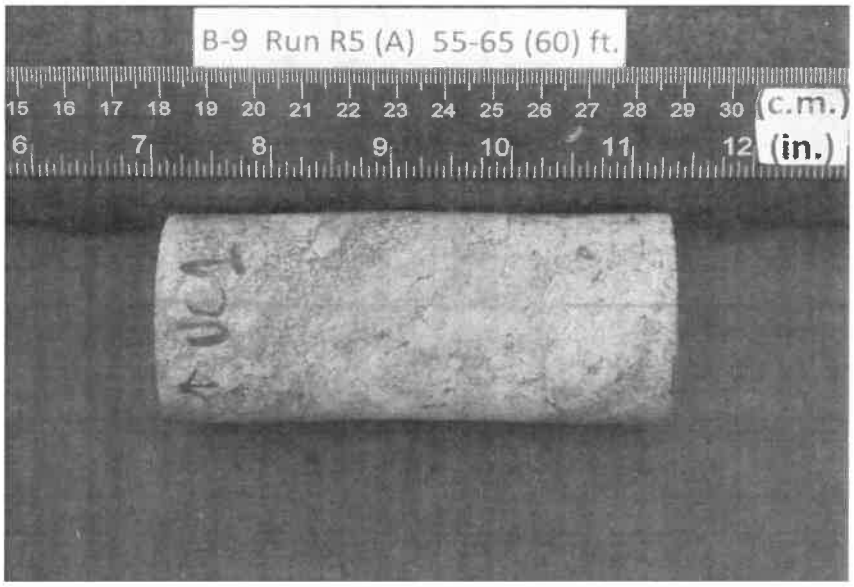
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00110	1.990	0.00055	0.032	YES
Diameter 2, in (rotated 90°)	0.00190	1.990	0.00095	0.055	YES
END 2					
Diameter 1, in	0.00090	1.990	0.00045	0.026	YES
Diameter 2, in (rotated 90°)	0.00160	1.990	0.00080	0.046	YES

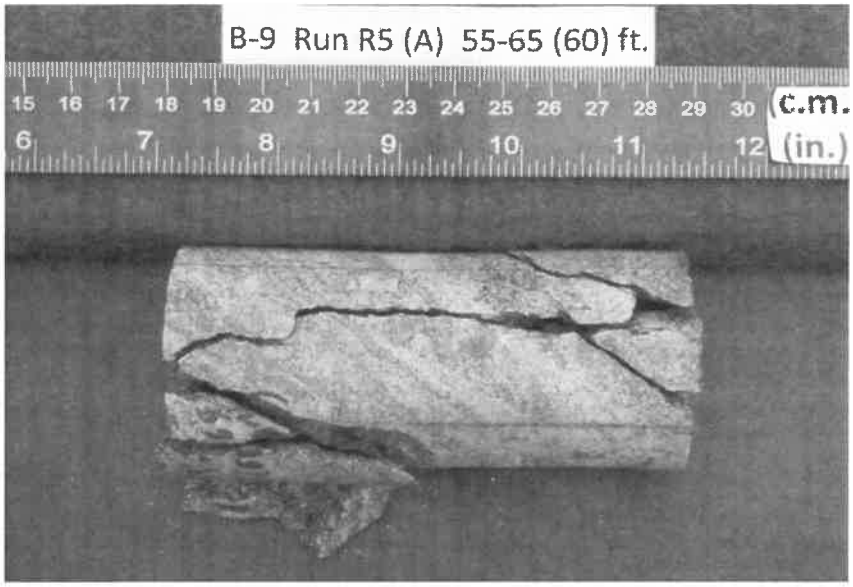
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-9
Sample ID:	Run R5 (A)
Depth, ft:	55-65 (60)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/6/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-9		
Sample ID:	Run R5 (B)		
Depth:	55-65 (63) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.33	4.33	4.33
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	604.31		
Bulk Density, lb/ft^3	171		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

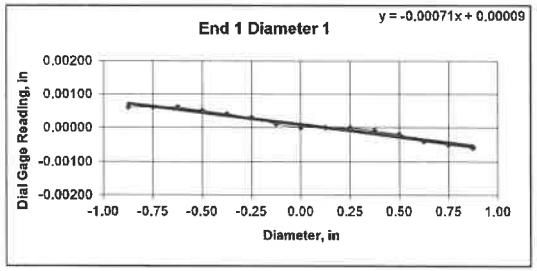
Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

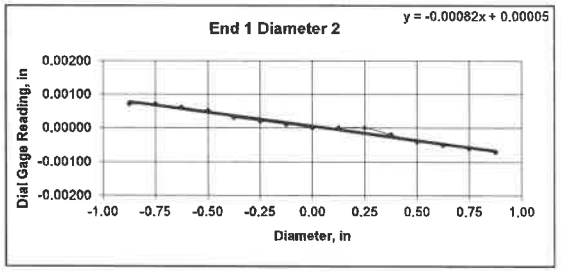
Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

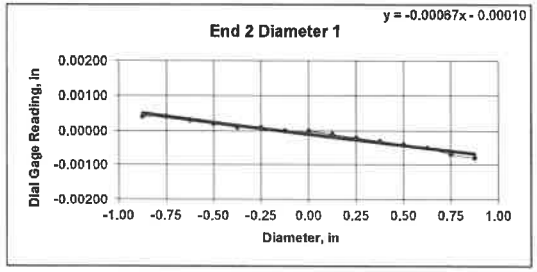
END FLATNESS AND PARALLELISM (Procedure FP1)

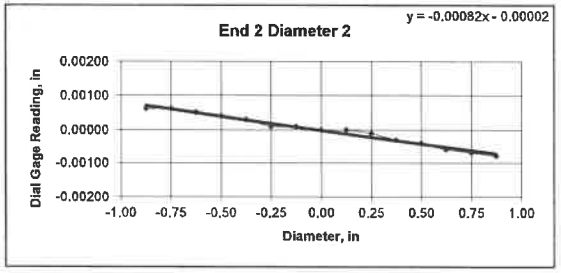
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00060	0.00060	0.00060	0.00050	0.00040	0.00030	0.00010	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00040	-0.00050	-0.00060
Diameter 2, in (rotated 90°)	0.00070	0.00070	0.00060	0.00050	0.00030	0.00020	0.00010	0.00000	0.00000	0.00000	-0.00020	-0.00040	-0.00050	-0.00060	-0.00070
											Difference between max and min readings, in:				
											0° =	0.00120	90° =	0.00140	
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00040	0.00040	0.00030	0.00020	0.00010	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00070	-0.00080
Diameter 2, in (rotated 90°)	0.00060	0.00060	0.00050	0.00040	0.00030	0.00010	0.00010	0.00000	0.00000	-0.00010	-0.00030	-0.00040	-0.00060	-0.00070	-0.00080
											Difference between max and min readings, in:				
											0° =	0.0012	90° =	0.0014	

Maximum difference must be < 0.0020 in. **Difference = ± 0.00070**
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00071
Angle of Best Fit Line: -0.04068

End 2:
Slope of Best Fit Line: -0.00067
Angle of Best Fit Line: -0.03839

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: -0.00082
Angle of Best Fit Line: -0.04698

End 2:
Slope of Best Fit Line: -0.00082
Angle of Best Fit Line: -0.04698

Maximum Angular Difference: 0.00000

Parallelism Tolerance Met? **YES**
Spherically Seated

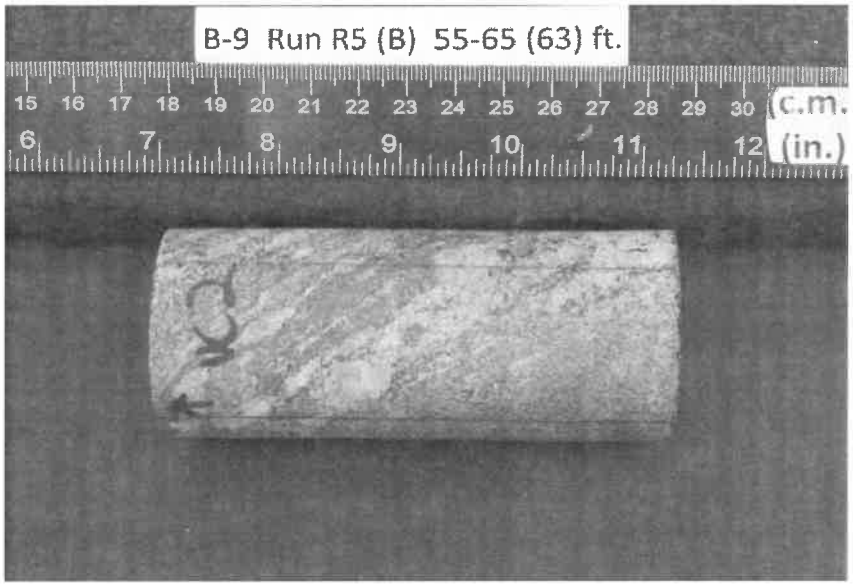
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00120	1.990	0.00060	0.035	YES
Diameter 2, in (rotated 90°)	0.00140	1.990	0.00070	0.040	YES
END 2					
Diameter 1, in	0.00120	1.990	0.00060	0.035	YES
Diameter 2, in (rotated 90°)	0.00140	1.990	0.00070	0.040	YES

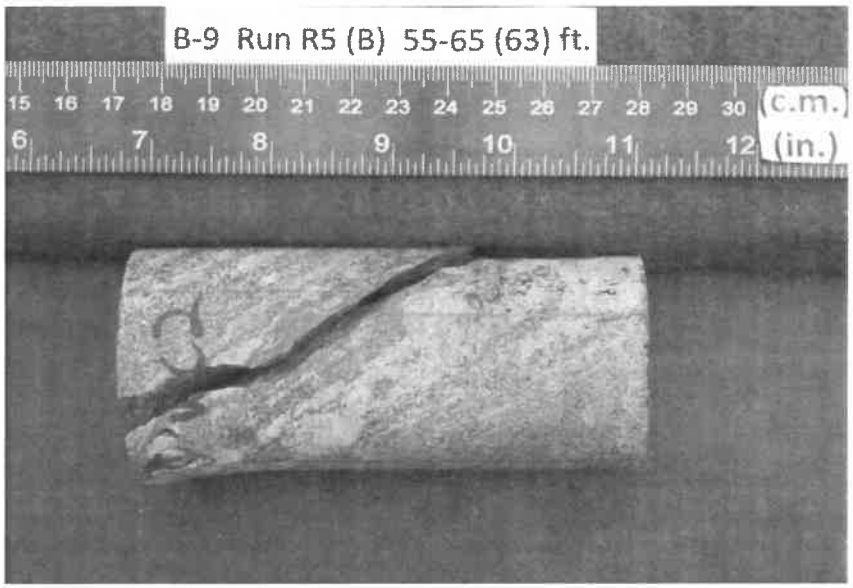
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-9
Sample ID:	Run R5 (B)
Depth, ft:	55-65 (63)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/6/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-9		
Sample ID:	Run R6 (A)		
Depth:	65-75 (72) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.35	4.35	4.35
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	616.46		
Bulk Density, lb/ft^3	173		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

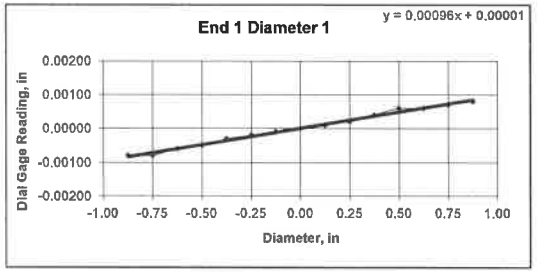
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00080	-0.00080	-0.00060	-0.00050	-0.00030	-0.00020	-0.00010	0.00000	0.00010	0.00020	0.00040	0.00060	0.00060	0.00070	0.00080
Diameter 2, in (rotated 90°)	0.00050	0.00050	0.00050	0.00040	0.00030	0.00020	0.00010	0.00000	0.00000	-0.00010	-0.00010	-0.00020	-0.00040	-0.00050	-0.00070

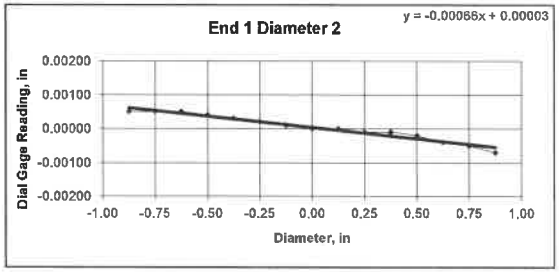
Difference between max and min readings, in: 0° = 0.00160 90° = 0.00120

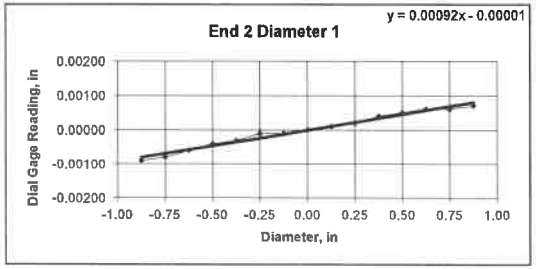
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00090	-0.00080	-0.00060	-0.00040	-0.00030	-0.00010	-0.00010	0.00000	0.00010	0.00020	0.00040	0.00050	0.00060	0.00060	0.00070
Diameter 2, in (rotated 90°)	0.00050	0.00050	0.00040	0.00030	0.00020	0.00020	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00070

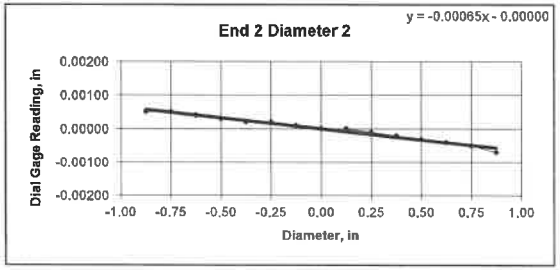
Difference between max and min readings, in: 0° = 0.0016 90° = 0.0012

Maximum difference must be < 0.0020 in. Difference = ± 0.00080
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00096
Angle of Best Fit Line: 0.05500

End 2:
Slope of Best Fit Line 0.00092
Angle of Best Fit Line: 0.05271

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00066
Angle of Best Fit Line: -0.03782

End 2:
Slope of Best Fit Line -0.00065
Angle of Best Fit Line: -0.03724

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

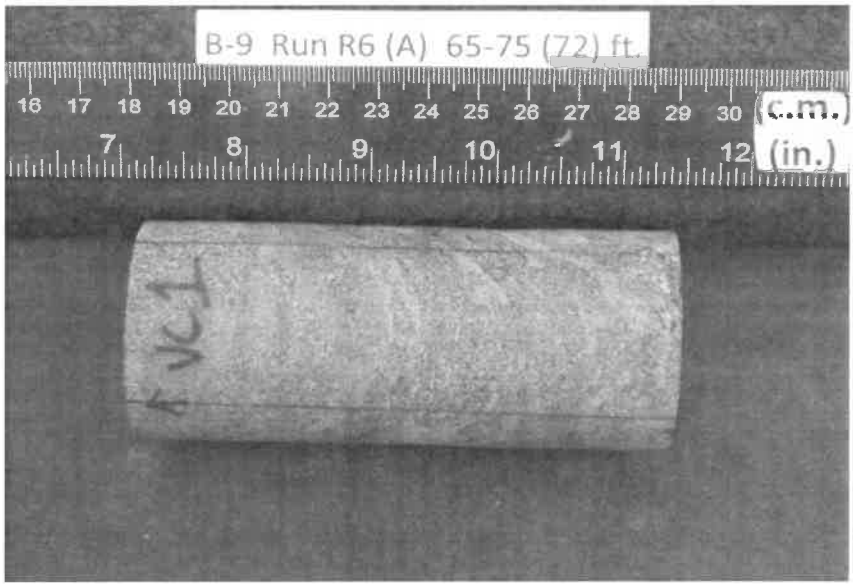
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00160	1.990	0.00080	0.046	YES
Diameter 2, in (rotated 90°)	0.00120	1.990	0.00060	0.035	YES
END 2					
Diameter 1, in	0.00160	1.990	0.00080	0.046	YES
Diameter 2, in (rotated 90°)	0.00120	1.990	0.00060	0.035	YES

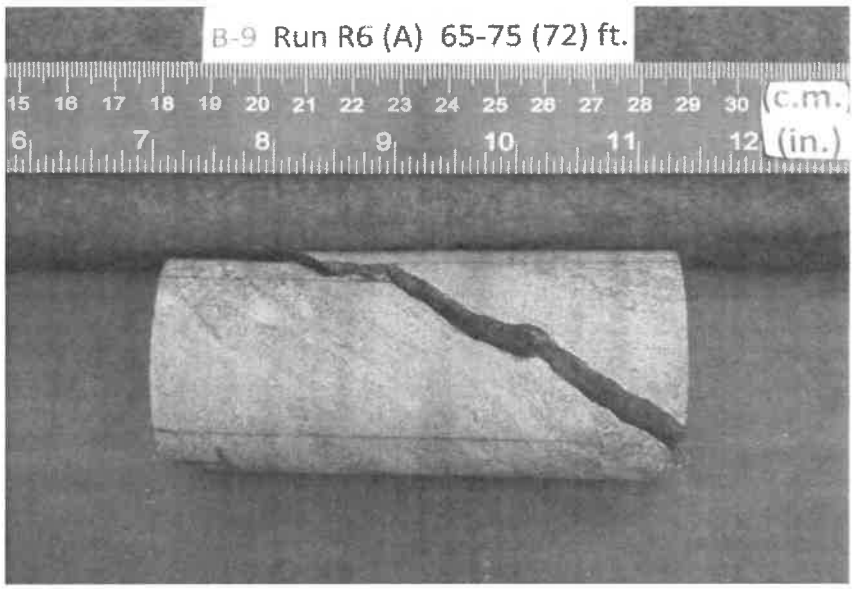
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-9
Sample ID:	Run R6 (A)
Depth, ft:	65-75 (72)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/6/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-9		
Sample ID:	Run R6 (B)		
Depth:	65-75 (73) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.28	4.28	4.28
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	606.04		
Bulk Density, lb/ft³	173		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

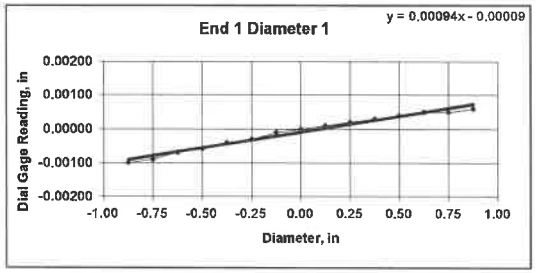
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00100	-0.00090	-0.00070	-0.00060	-0.00040	-0.00030	-0.00010	0.00000	0.00010	0.00020	0.00030	0.00040	0.00050	0.00050	0.00060
Diameter 2, in (rotated 90°)	0.00040	0.00040	0.00030	0.00030	0.00020	0.00010	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00060

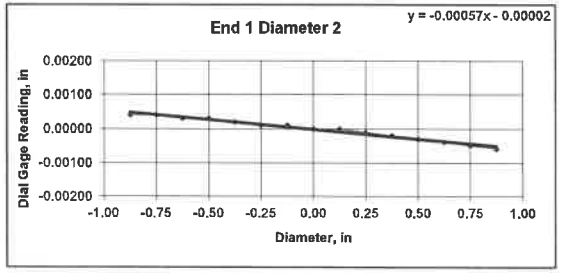
Difference between max and min readings, in: 0° = 0.00160 90° = 0.00100

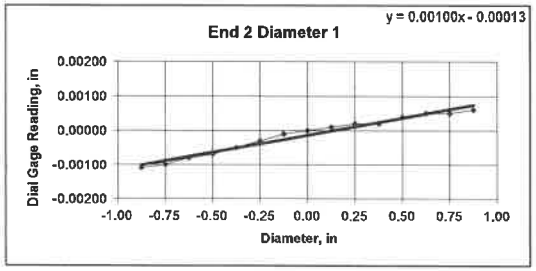
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00110	-0.00100	-0.00080	-0.00070	-0.00050	-0.00030	-0.00010	0.00000	0.00010	0.00020	0.00020	0.00040	0.00050	0.00050	0.00060
Diameter 2, in (rotated 90°)	0.00040	0.00040	0.00040	0.00030	0.00020	0.00010	0.00010	0.00000	0.00000	-0.00010	-0.00010	-0.00020	-0.00040	-0.00050	-0.00060

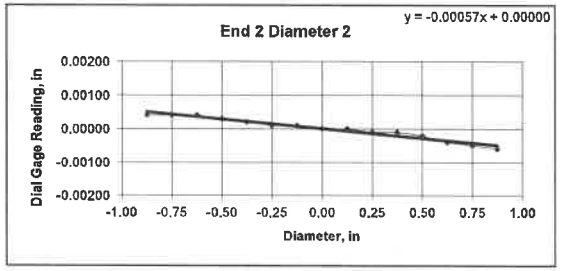
Difference between max and min readings, in: 0° = 0.0017 90° = 0.001

Maximum difference must be < 0.0020 in. Difference = ± 0.00085
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00094
Angle of Best Fit Line: 0.05386

End 2:
Slope of Best Fit Line 0.00100
Angle of Best Fit Line: 0.05730

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00057
Angle of Best Fit Line: -0.03266

End 2:
Slope of Best Fit Line -0.00057
Angle of Best Fit Line: -0.03266

Maximum Angular Difference: 0.00000

Parallelism Tolerance Met? **YES**
Spherically Seated

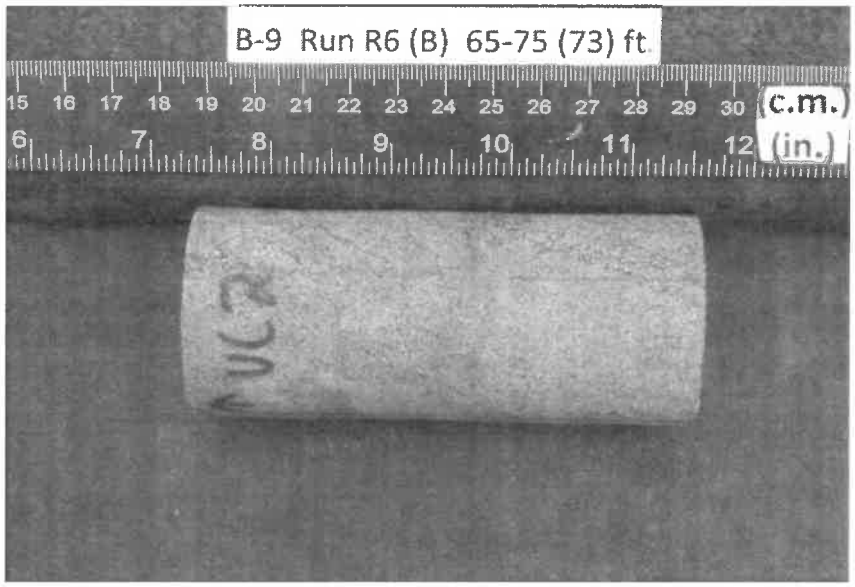
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00160	1.990	0.00080	0.046	YES
Diameter 2, in (rotated 90°)	0.00100	1.990	0.00050	0.029	YES
END 2					
Diameter 1, in	0.00170	1.990	0.00085	0.049	YES
Diameter 2, in (rotated 90°)	0.00100	1.990	0.00050	0.029	YES

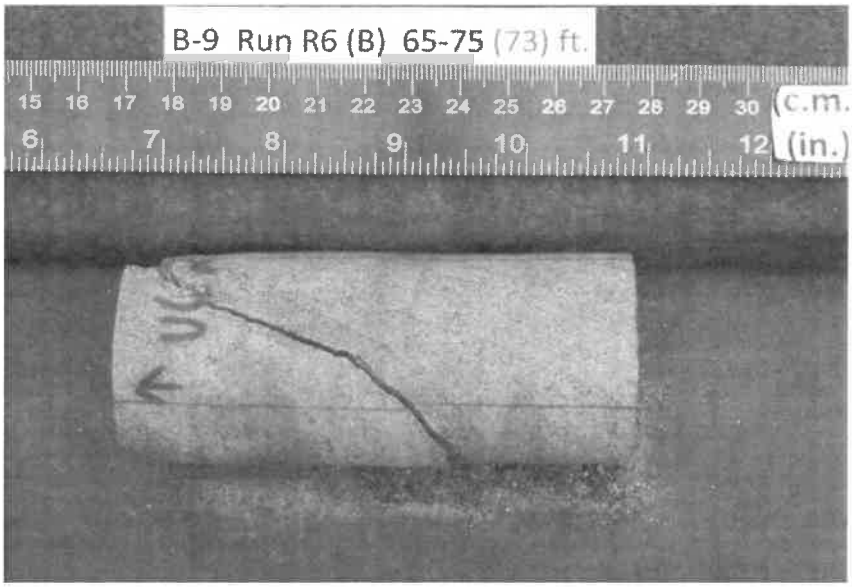
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-9
Sample ID:	Run R6 (B)
Depth, ft:	65-75 (73)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/6/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-9		
Sample ID:	Run R10		
Depth:	105-115 (109) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.21	4.21	4.21
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	583.45		
Bulk Density, lb/ft³	169		
Length to Diameter Ratio:	2.1	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

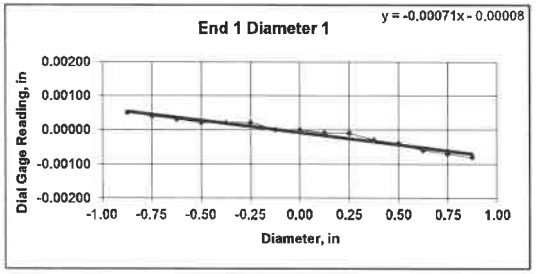
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00050	0.00040	0.00030	0.00020	0.00020	0.00020	0.00000	0.00000	-0.00010	-0.00010	-0.00030	-0.00040	-0.00060	-0.00070	-0.00080
Diameter 2, in (rotated 90°)	0.00050	0.00040	0.00040	0.00040	0.00030	0.00020	0.00010	0.00000	0.00000	-0.00020	-0.00020	-0.00020	-0.00050	-0.00080	-0.00090

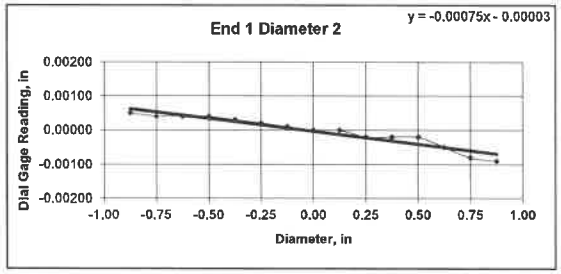
Difference between max and min readings, in: 0° = 0.00130 90° = 0.00140

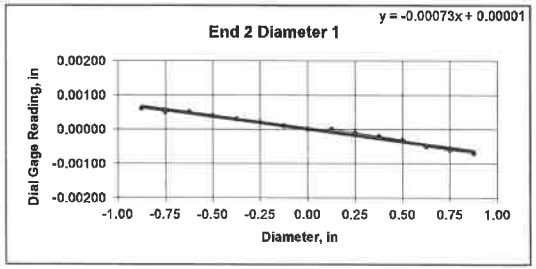
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00060	0.00050	0.00050	0.00040	0.00030	0.00020	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00050	-0.00060	-0.00070
Diameter 2, in (rotated 90°)	0.00050	0.00050	0.00040	0.00040	0.00010	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00040	-0.00050	-0.00050	-0.00070	-0.00090

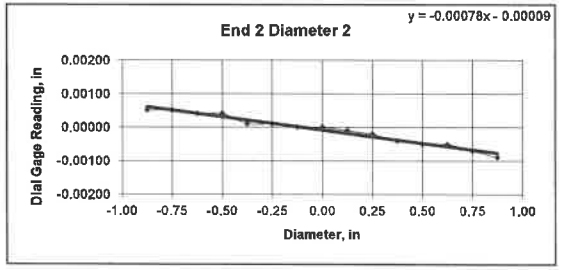
Difference between max and min readings, in: 0° = 0.0013 90° = 0.0014

Maximum difference must be < 0.0020 in. Difference = ± 0.00070
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00071
Angle of Best Fit Line: -0.04068

End 2:
Slope of Best Fit Line -0.00073
Angle of Best Fit Line: -0.04183

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00075
Angle of Best Fit Line: -0.04297

End 2:
Slope of Best Fit Line -0.00078
Angle of Best Fit Line: -0.04469

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

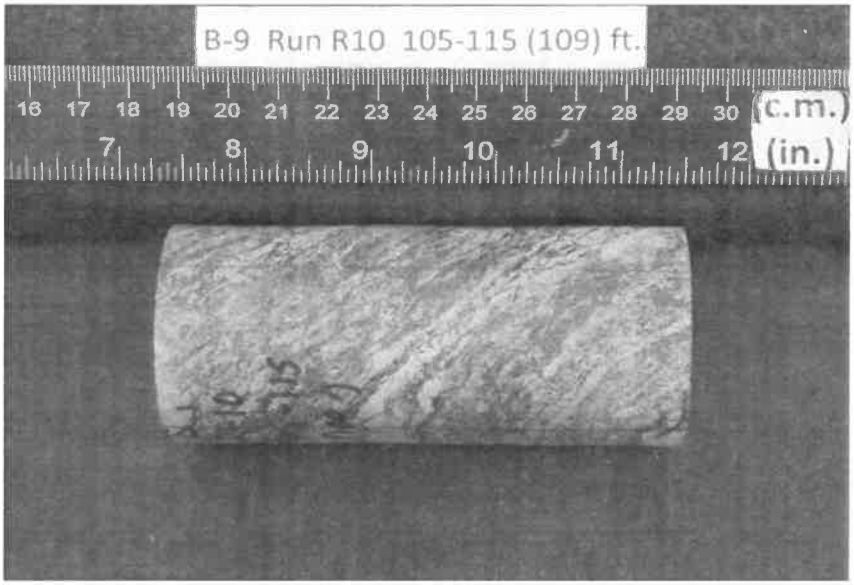
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00130	1.990	0.00065	0.037	YES
Diameter 2, in (rotated 90°)	0.00140	1.990	0.00070	0.040	YES
END 2					
Diameter 1, in	0.00130	1.990	0.00065	0.037	YES
Diameter 2, in (rotated 90°)	0.00140	1.990	0.00070	0.040	YES

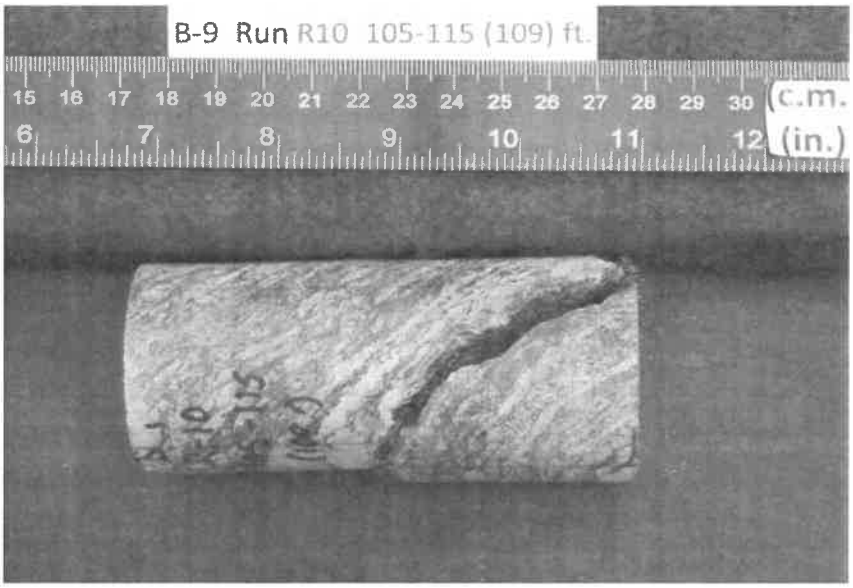
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/7/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-9
Sample ID:	Run R10
Depth, ft:	105-115 (109)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/18/12-7/24/12
Tested By:	daa
Checked By:	njh

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-10	Run R2	44-45 (46)	171	13,153	1	NO*
B-10	Run R4 (A)	64-74 (66)	166	2,009	1	NO*
B-10	Run R4 (B)	64-74 (70)	157	2,423	1	NO*, NO**
B-10	Run R5	74-84 (84)	164	1,624	1	YES

Notes:
Density determined on core samples by measuring dimensions and weight and then calculating.
All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.
Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)
* The as-received core did not meet the ASTM side straightness tolerance. Best effort end preparation. See Tolerance report for details.
** Specimen L/D < 2.

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/18/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-10		
Sample ID:	Run R2		
Depth:	44-54 (46) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.32	4.32	4.32
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	605.36		
Bulk Density, lb/ft³	171		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Diameter 2, in (rotated 90°)	0.00070	0.00070	0.00050	0.00040	0.00030	0.00020	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00050	-0.00070	-0.00080	-0.00090

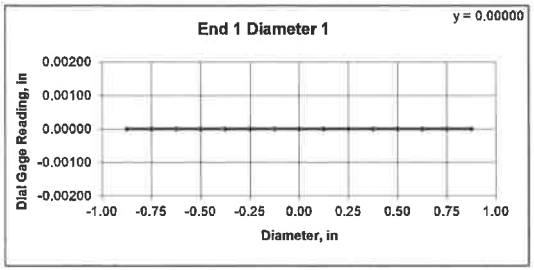
Difference between max and min readings, in: 0° = 0.00000 90° = 0.00160

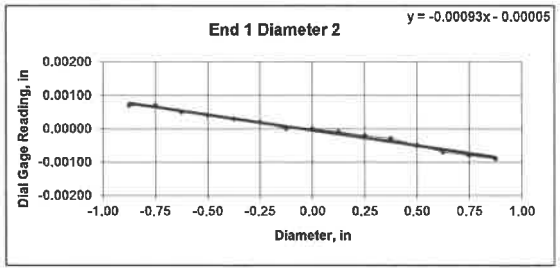
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Diameter 2, in (rotated 90°)	0.00060	0.00060	0.00060	0.00050	0.00040	0.00020	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00060	-0.00080	-0.00100

Difference between max and min readings, in: 0° = 0.0001 90° = 0.0016

Maximum difference must be < 0.0020 in. Difference = ± 0.00080

Flatness Tolerance Met? **YES**





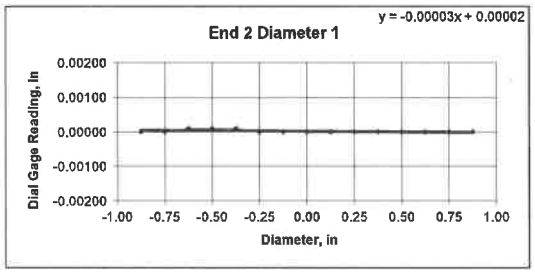
DIAMETER 1

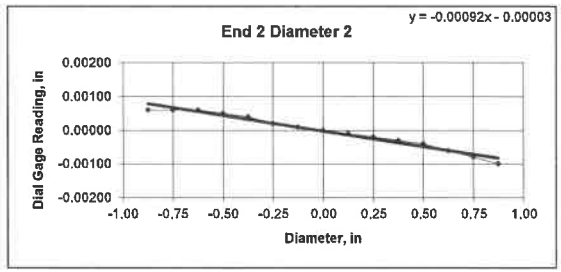
End 1:
Slope of Best Fit Line 0.00000
Angle of Best Fit Line: 0.00000

End 2:
Slope of Best Fit Line -0.00003
Angle of Best Fit Line: -0.00172

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated





DIAMETER 2

End 1:
Slope of Best Fit Line -0.00093
Angle of Best Fit Line: -0.05329

End 2:
Slope of Best Fit Line -0.00092
Angle of Best Fit Line: -0.05271

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

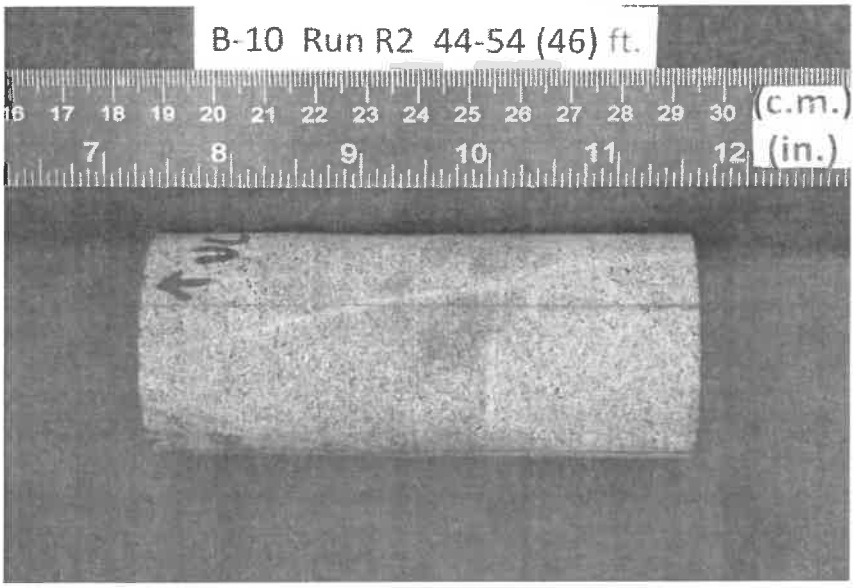
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00000	1.990	0.00000	0.000	YES
Diameter 2, in (rotated 90°)	0.00160	1.990	0.00080	0.046	YES
END 2					
Diameter 1, in	0.00010	1.990	0.00005	0.003	YES
Diameter 2, in (rotated 90°)	0.00160	1.990	0.00080	0.046	YES

Maximum angle of departure must be ≤ 0.25°

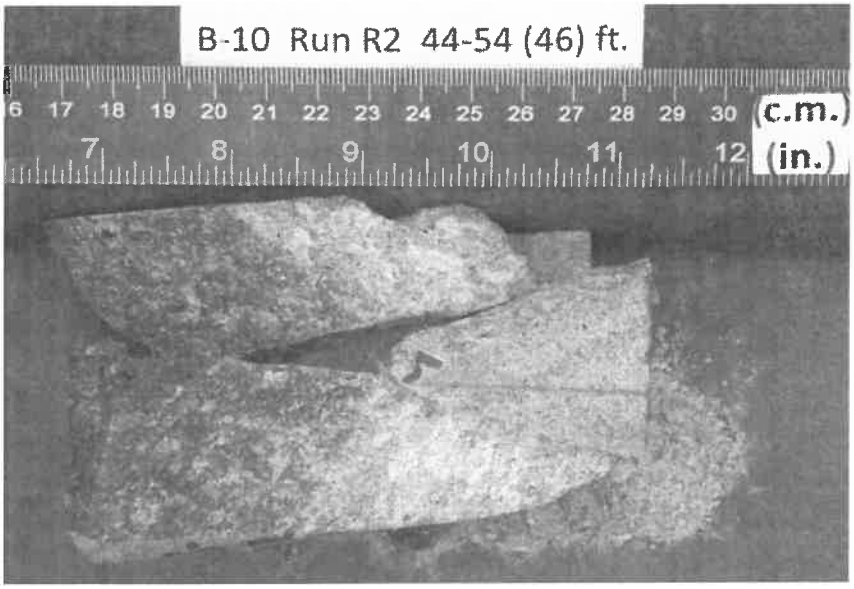
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-10
Sample ID:	Run R2
Depth, ft:	44-54 (46)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/20/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-10		
Sample ID:	Run R4 (A)		
Depth:	64-74 (66) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	3.93	3.93	3.93
Specimen Diameter, in:	1.98	1.99	1.99
Specimen Mass, g:	533.06		
Bulk Density, lb/ft³	167		
Length to Diameter Ratio:	2.0	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

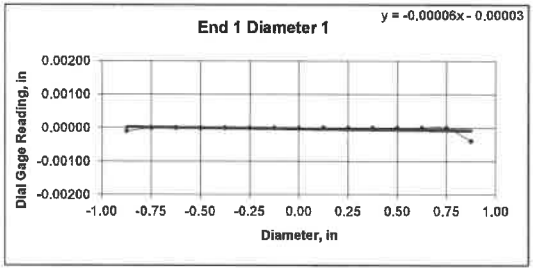
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00040
Diameter 2, in (rotated 90°)	-0.00180	-0.00170	-0.00140	-0.00090	-0.00060	-0.00040	-0.00020	0.00000	0.00010	0.00040	0.00070	0.00120	0.00160	0.00190	0.00240

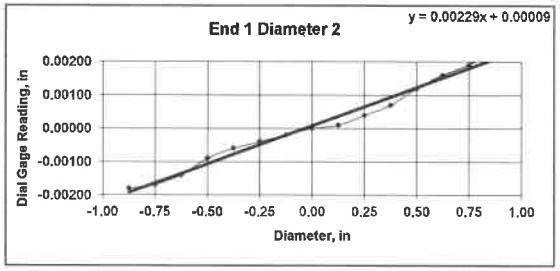
Difference between max and min readings, in: 0° = 0.00040 90° = 0.00420

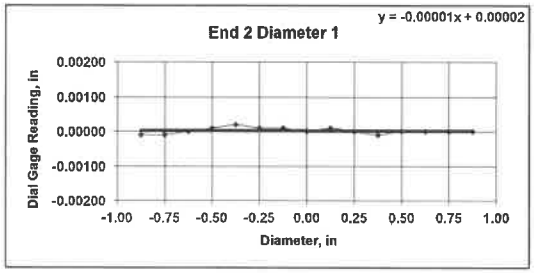
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00010	-0.00010	0.00000	0.00010	0.00020	0.00010	0.00010	0.00000	0.00010	0.00000	-0.00010	0.00000	0.00000	0.00000	0.00000
Diameter 2, in (rotated 90°)	-0.00200	-0.00170	-0.00150	-0.00110	-0.00060	-0.00040	-0.00030	0.00000	0.00030	0.00070	0.00100	0.00130	0.00120	0.00200	0.00170

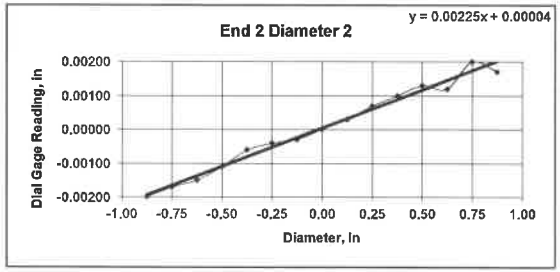
Difference between max and min readings, in: 0° = 0.0003 90° = 0.004

Maximum difference must be < 0.0020 in. Difference = ± 0.00210
Flatness Tolerance Met? **NO**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00006
Angle of Best Fit Line: -0.00344

End 2:
Slope of Best Fit Line -0.00001
Angle of Best Fit Line: -0.00057

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00229
Angle of Best Fit Line: 0.13121

End 2:
Slope of Best Fit Line 0.00225
Angle of Best Fit Line: 0.12892

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00040	1.985	0.00020	0.012	YES
Diameter 2, in (rotated 90°)	0.00420	1.985	0.00212	0.121	YES
END 2					
Diameter 1, in	0.00030	1.985	0.00015	0.009	YES
Diameter 2, in (rotated 90°)	0.00400	1.985	0.00202	0.115	YES

Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	07/24/12
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-10	Reliable dial gauge measurements could not be performed on this rock type. Tolerance measurements were performed using a machinist straightedge and feeler gauges to ASTM specifications.	
Sample ID:	Run R4 (A)		
Depth:	64-74 (66) ft.		
Visual Description:	NA		

BEST EFFORT END FLATNESS TOLERANCES OF ROCK CORE SPECIMENS TO ASTM D 4543-08

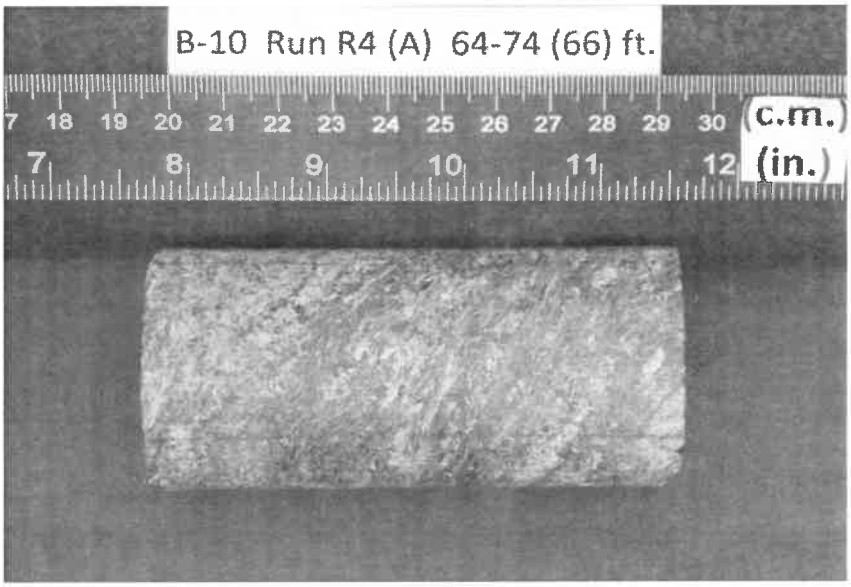
Feeler Gauge: FG-02
Straightedge: EDP51455

END FLATNESS		
END 1		
Diameter 1	Is the maximum gap $\leq \pm 0.001$ in.?	YES
Diameter 2 (rotated 90°)	Is the maximum gap $\leq \pm 0.001$ in.?	YES
END 2		
Diameter 1	Is the maximum gap $\leq \pm 0.001$ in.?	YES
Diameter 2 (rotated 90°)	Is the maximum gap $\leq \pm 0.001$ in.?	YES
	End Flatness Tolerance Met?	**YES**

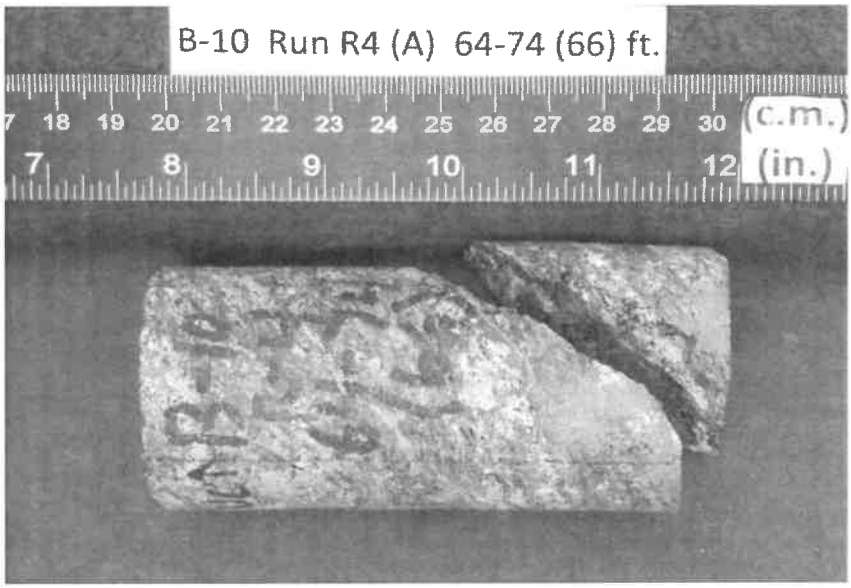
If specimen does not pass, regrind the end that did not pass and recheck end flatness
If specimen does not pass after a second grinding, report specimen as "Best Effort Sample Preparation."

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/24/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-10
Sample ID:	Run R4 (A)
Depth, ft:	64-74 (66)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/20/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-10		
Sample ID:	Run R4 (B)		
Depth:	64-74 (70) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	3.39	3.39	3.39
Specimen Diameter, in:	2.00	1.99	2.00
Specimen Mass, g:	439.91		
Bulk Density, lb/ft³	158		
Length to Diameter Ratio:	1.7	**Length to Diameter Ratio Tolerance Met?**	**NO**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

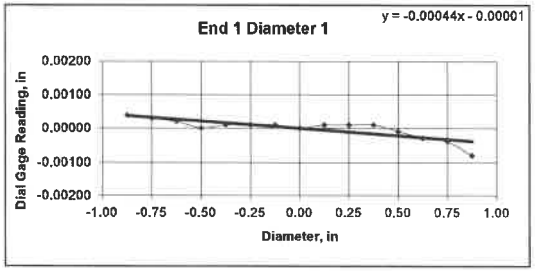
Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

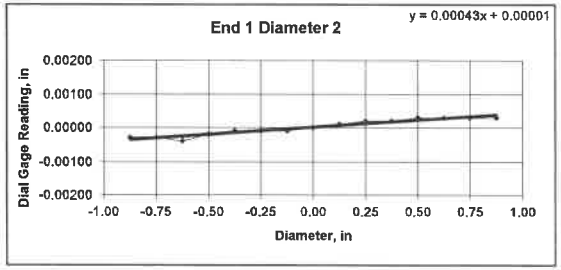
Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

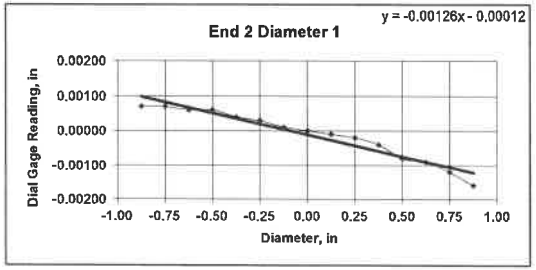
END FLATNESS AND PARALLELISM (Procedure FP1)

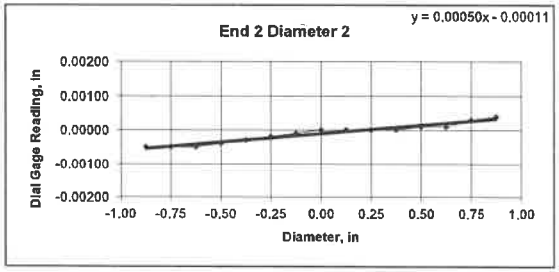
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00040	0.00030	0.00020	0.00000	0.00010	0.00010	0.00010	0.00000	0.00010	0.00010	0.00010	-0.00010	-0.00030	-0.00040	-0.00080
Diameter 2, in (rotated 90°)	-0.00030	-0.00030	-0.00040	-0.00020	-0.00010	-0.00010	-0.00010	0.00000	0.00010	0.00020	0.00020	0.00030	0.00030	0.00030	0.00030
											Difference between max and min readings, in:				
											0° =	0.00120	90° =	0.00070	
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00070	0.00070	0.00060	0.00060	0.00040	0.00030	0.00010	0.00000	-0.00010	-0.00020	-0.00040	-0.00080	-0.00090	-0.00120	-0.00160
Diameter 2, in (rotated 90°)	-0.00050	-0.00050	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00030	0.00040
											Difference between max and min readings, in:				
											0° =	0.0023	90° =	0.0009	

Maximum difference must be < 0.0020 in. Difference = ± 0.00115
Flatness Tolerance Met? **NO**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00044
Angle of Best Fit Line: -0.02521

End 2:
Slope of Best Fit Line: -0.00126
Angle of Best Fit Line: -0.07219

Maximum Angular Difference: 0.04698

Parallelism Tolerance Met? **NO**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: 0.00043
Angle of Best Fit Line: 0.02464

End 2:
Slope of Best Fit Line: 0.00050
Angle of Best Fit Line: 0.02865

Maximum Angular Difference: 0.00401

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00120	1.995	0.00060	0.034	YES
Diameter 2, in (rotated 90°)	0.00070	1.995	0.00035	0.020	YES
END 2					
Diameter 1, in	0.00230	1.995	0.00115	0.066	YES
Diameter 2, in (rotated 90°)	0.00090	1.995	0.00045	0.026	YES

Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	07/24/12
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-10	Reliable dial gauge measurements could not be performed on this rock type. Tolerance measurements were performed using a machinist straightedge and feeler gauges to ASTM specifications.	
Sample ID:	Run R4 (B)		
Depth:	64-74 (70) ft.		
Visual Description:	NA		

BEST EFFORT END FLATNESS TOLERANCES OF ROCK CORE SPECIMENS TO ASTM D 4543-08

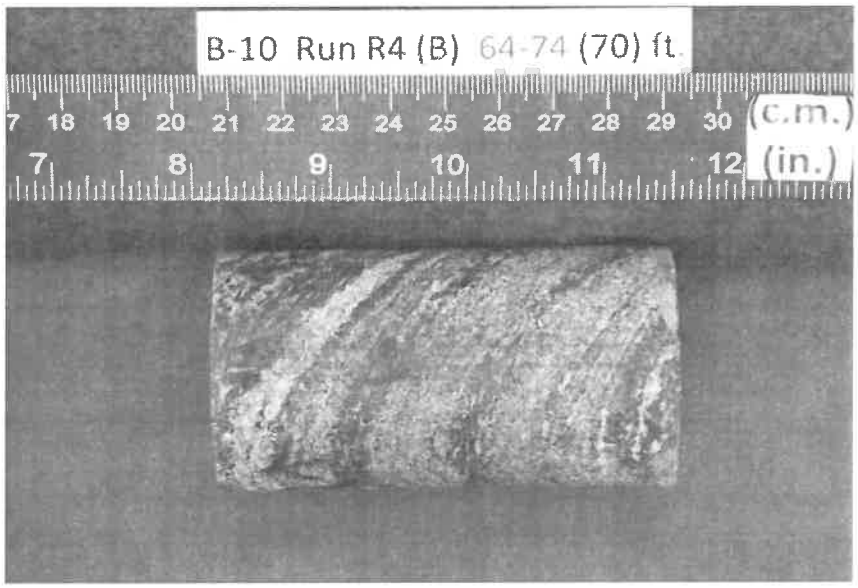
Feeler Gauge: FG-02
Straightedge: EDP51455

END FLATNESS		
END 1		
Diameter 1	Is the maximum gap $\leq \pm 0.001$ in.?	YES
Diameter 2 (rotated 90°)	Is the maximum gap $\leq \pm 0.001$ in.?	YES
END 2		
Diameter 1	Is the maximum gap $\leq \pm 0.001$ in.?	YES
Diameter 2 (rotated 90°)	Is the maximum gap $\leq \pm 0.001$ in.?	YES
	End Flatness Tolerance Met?	**YES**

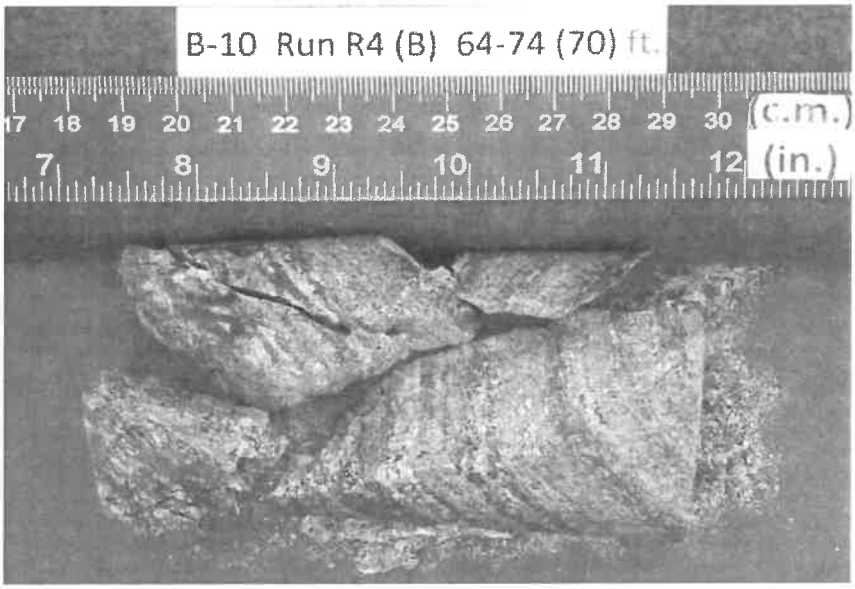
If specimen does not pass, regrind the end that did not pass and recheck end flatness
If specimen does not pass after a second grinding, report specimen as "Best Effort Sample Preparation."

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/24/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-10
Sample ID:	Run R4 (B)
Depth, ft:	64-74 (70)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/20/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-10		
Sample ID:	Run R5		
Depth:	74-84 (84) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.37	4.37	4.37
Specimen Diameter, in:	1.97	1.98	1.98
Specimen Mass, g:	579.14		
Bulk Density, lb/ft^3	164		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

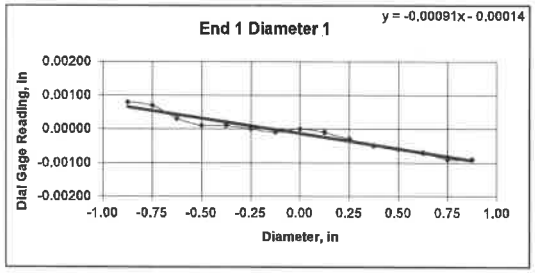
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00080	0.00070	0.00030	0.00010	0.00010	0.00000	-0.00010	0.00000	-0.00010	-0.00030	-0.00050	-0.00060	-0.00070	-0.00090	-0.00090
Diameter 2, in (rotated 90°)	0.00060	0.00060	0.00050	0.00050	0.00030	0.00010	0.00010	0.00000	0.00000	-0.00030	-0.00050	-0.00060	-0.00060	-0.00070	-0.00080

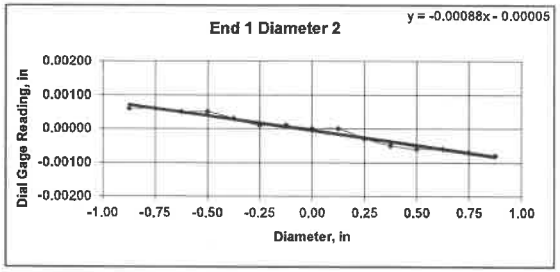
Difference between max and min readings, in: 0° = 0.00170 90° = 0.00140

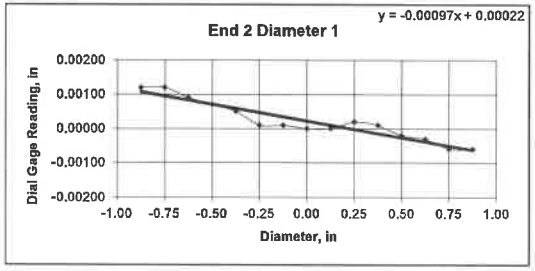
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00120	0.00120	0.00090	0.00070	0.00050	0.00010	0.00010	0.00000	0.00000	0.00020	0.00010	-0.00020	-0.00030	-0.00060	-0.00060
Diameter 2, in (rotated 90°)	0.00090	0.00090	0.00090	0.00050	0.00050	0.00040	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00030	-0.00040	-0.00050	-0.00060

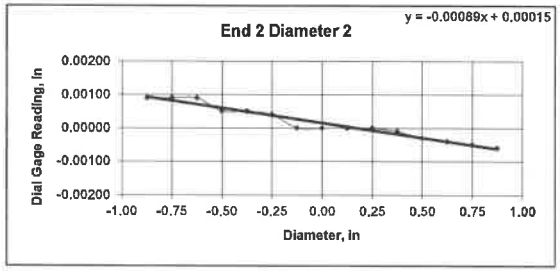
Difference between max and min readings, in: 0° = 0.0018 90° = 0.0015

Maximum difference must be < 0.0020 in. Difference = ± 0.00090
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00091
Angle of Best Fit Line: -0.05214

End 2:
Slope of Best Fit Line -0.00097
Angle of Best Fit Line: -0.05558

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00088
Angle of Best Fit Line: -0.05042

End 2:
Slope of Best Fit Line -0.00089
Angle of Best Fit Line: -0.05099

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

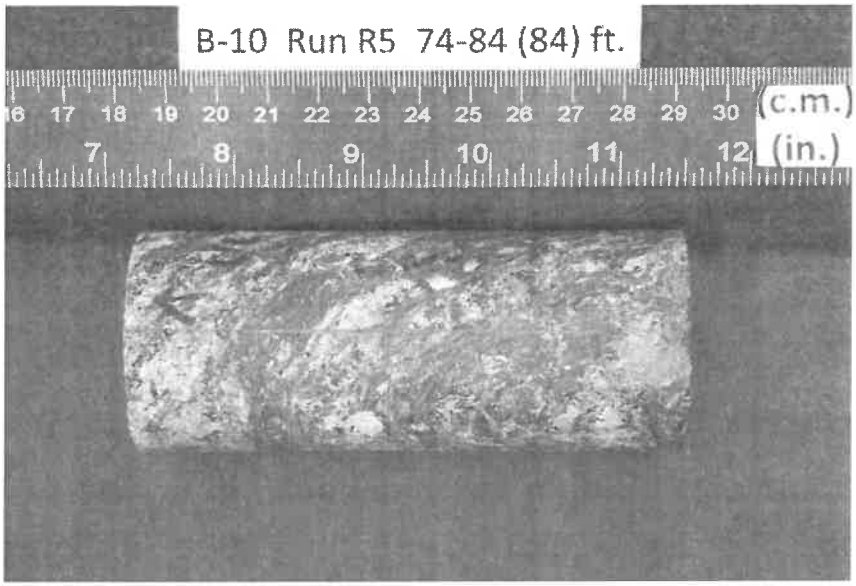
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00170	1.975	0.00086	0.049	YES
Diameter 2, in (rotated 90°)	0.00140	1.975	0.00071	0.041	YES
END 2					
Diameter 1, in	0.00180	1.975	0.00091	0.052	YES
Diameter 2, in (rotated 90°)	0.00150	1.975	0.00076	0.044	YES

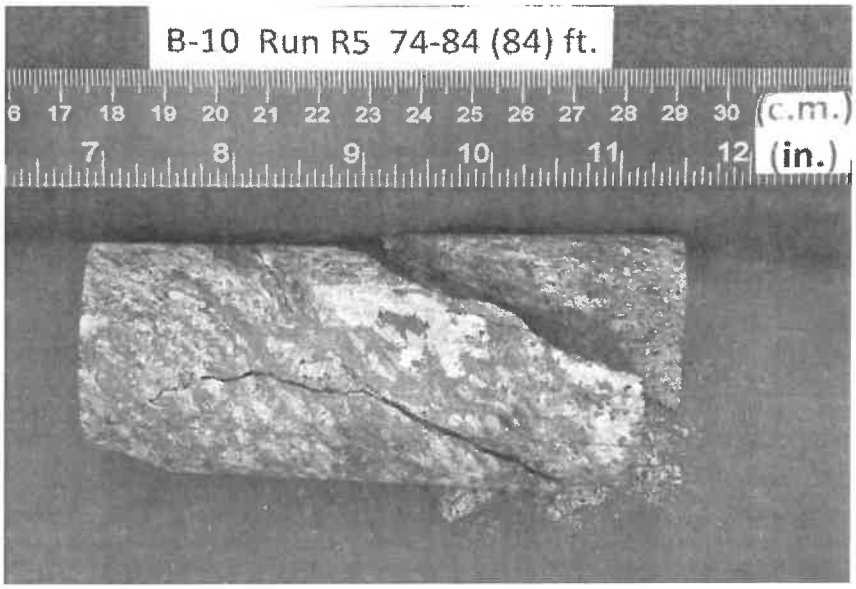
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-10
Sample ID:	Run R5
Depth, ft:	74-84 (84)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/18/12-7/23/12
Tested By:	daa
Checked By:	njh

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-11	Run R2	35.5-45.5 (36)	170	16,548	1	YES
B-11	Run R3	45.5-55.5 (46)	170	7,699	1	NO*
B-11	Run R4	55.5-65.5 (63)	172	12,301	1	YES
B-11	Run R6	75.5-85.5 (80)	171	9,528	1	YES
B-11	Run R7	85.5-95.5 (88)	169	17,720	1	YES
B-11	Run R8	95.5-105.5 (97)	172	19,849	1	YES

Notes:
Density determined on core samples by measuring dimensions and weight and then calculating.
All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.
Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)
* The as-received core did not meet the ASTM side straightness tolerance. Best effort end preparation. See Tolerance report for details.

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/18/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-11		
Sample ID:	Run R2		
Depth:	35.5-45.5 (36) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.37	4.37	4.37
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	602.16		
Bulk Density, lb/ft^3	170		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

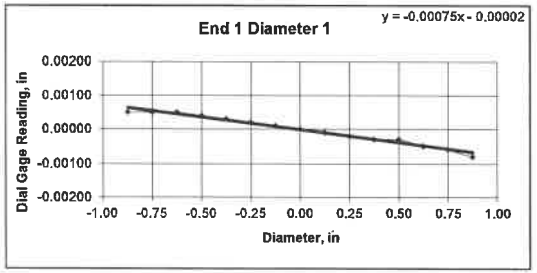
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00050	0.00050	0.00050	0.00040	0.00030	0.00020	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00030	-0.00050	-0.00060	-0.00080
Diameter 2, in (rotated 90°)	-0.00050	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	-0.00010	0.00000	0.00010	0.00010	0.00020	0.00020	0.00030	0.00030	0.00030

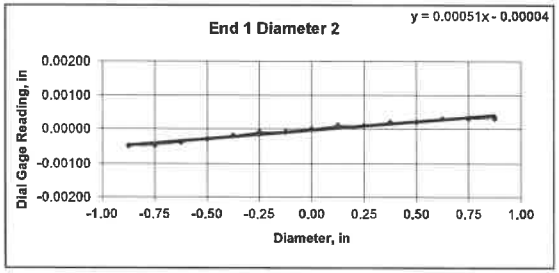
Difference between max and min readings, in: 0° = 0.00130 90° = 0.00080

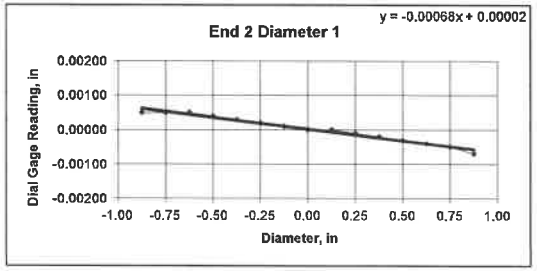
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00050	0.00050	0.00050	0.00040	0.00030	0.00020	0.00010	0.00000	0.00000	0.00000	-0.00020	-0.00030	-0.00040	-0.00050	-0.00070
Diameter 2, in (rotated 90°)	-0.00040	-0.00040	-0.00040	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00020	0.00020	0.00030	0.00030

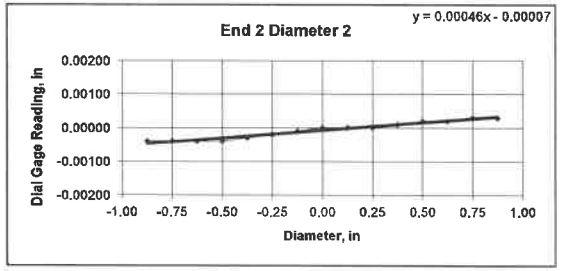
Difference between max and min readings, in: 0° = 0.0012 90° = 0.0007

Maximum difference must be < 0.0020 in. Difference = ± 0.00065
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00075
Angle of Best Fit Line: -0.04297

End 2:
Slope of Best Fit Line: -0.00068
Angle of Best Fit Line: -0.03896

Maximum Angular Difference: 0.00401

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: 0.00051
Angle of Best Fit Line: 0.02922

End 2:
Slope of Best Fit Line: 0.00046
Angle of Best Fit Line: 0.02636

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? **YES**
Spherically Seated

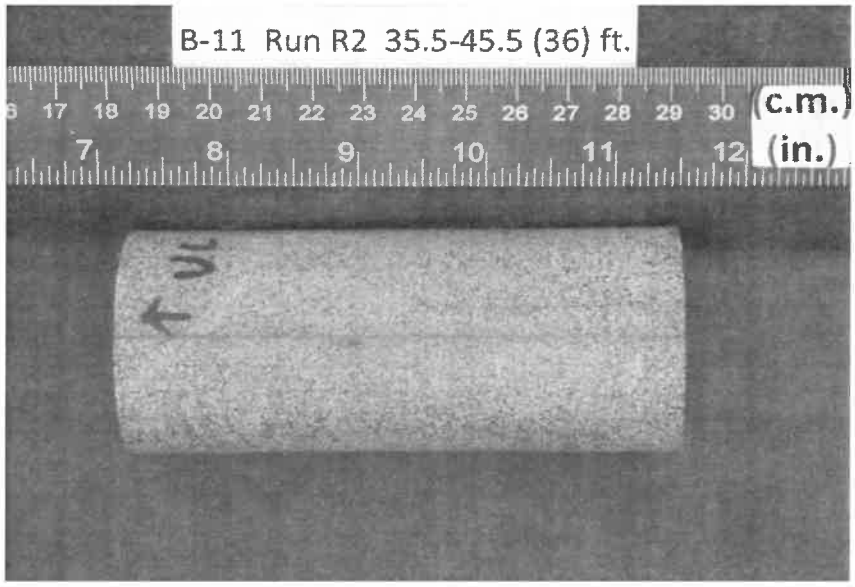
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00130	1.980	0.00066	0.038	YES
Diameter 2, in (rotated 90°)	0.00080	1.980	0.00040	0.023	YES
END 2					
Diameter 1, in	0.00120	1.980	0.00061	0.035	YES
Diameter 2, in (rotated 90°)	0.00070	1.980	0.00035	0.020	YES

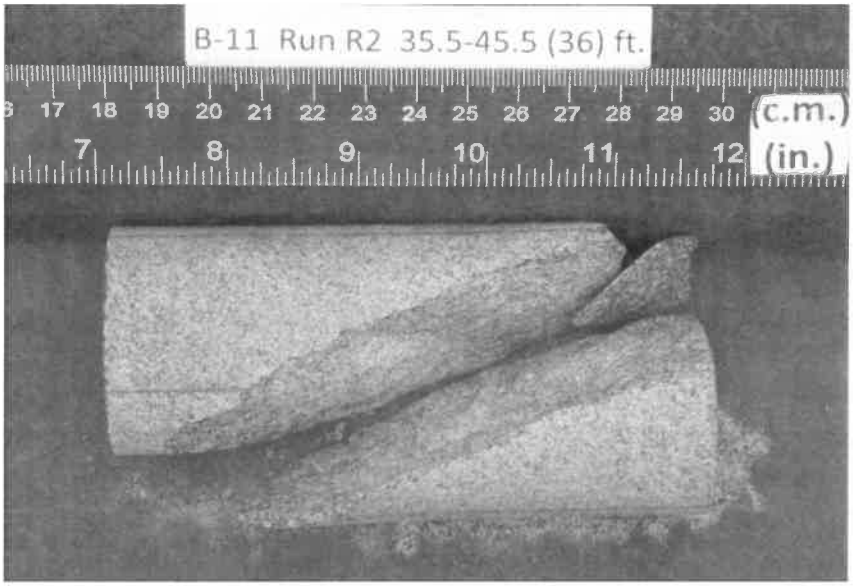
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-11
Sample ID:	Run R2
Depth, ft:	35.5-45.5 (36)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/18/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-11		
Sample ID:	Run R3		
Depth:	45.5-55.5 (46) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.26	4.26	4.26
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	578.28		
Bulk Density, lb/ft³	168		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

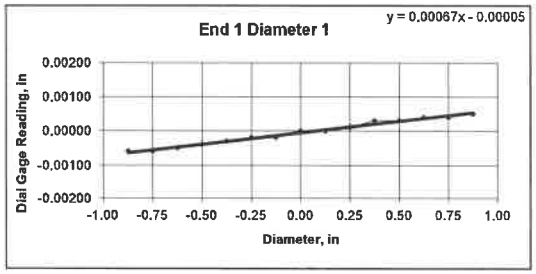
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00060	-0.00060	-0.00050	-0.00040	-0.00030	-0.00020	-0.00020	0.00000	0.00000	0.00010	0.00030	0.00030	0.00040	0.00040	0.00050
Diameter 2, in (rotated 90°)	0.00050	0.00050	0.00040	0.00040	0.00030	0.00030	0.00000	0.00000	-0.00020	-0.00030	-0.00030	-0.00040	-0.00070	-0.00080	-0.00100

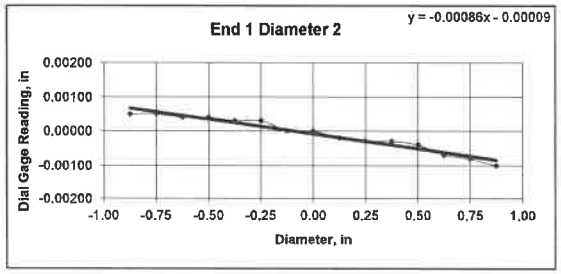
Difference between max and min readings, in: 0° = 0.00110 90° = 0.00150

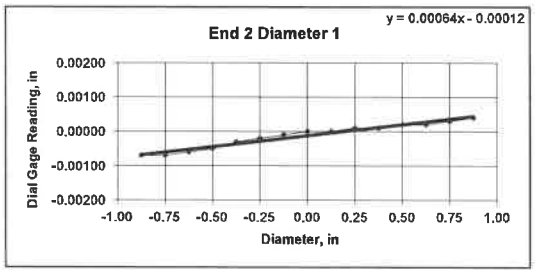
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00070	-0.00070	-0.00060	-0.00050	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00010	0.00020	0.00020	0.00030	0.00040
Diameter 2, in (rotated 90°)	0.00060	0.00050	0.00050	0.00030	0.00030	0.00010	0.00010	0.00000	0.00000	-0.00020	-0.00040	-0.00050	-0.00060	-0.00070	-0.00080

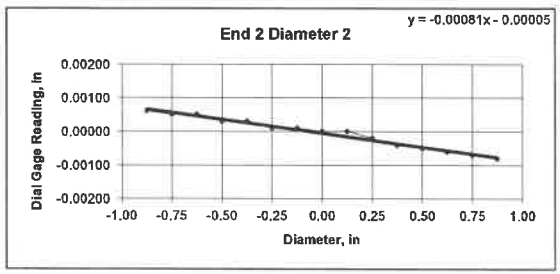
Difference between max and min readings, in: 0° = 0.0011 90° = 0.0014

Maximum difference must be < 0.0020 in. Difference = ± 0.00075
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00067
Angle of Best Fit Line: 0.03839

End 2:
Slope of Best Fit Line 0.00064
Angle of Best Fit Line: 0.03667

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00086
Angle of Best Fit Line: -0.04927

End 2:
Slope of Best Fit Line -0.00081
Angle of Best Fit Line: -0.04641

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? **YES**
Spherically Seated

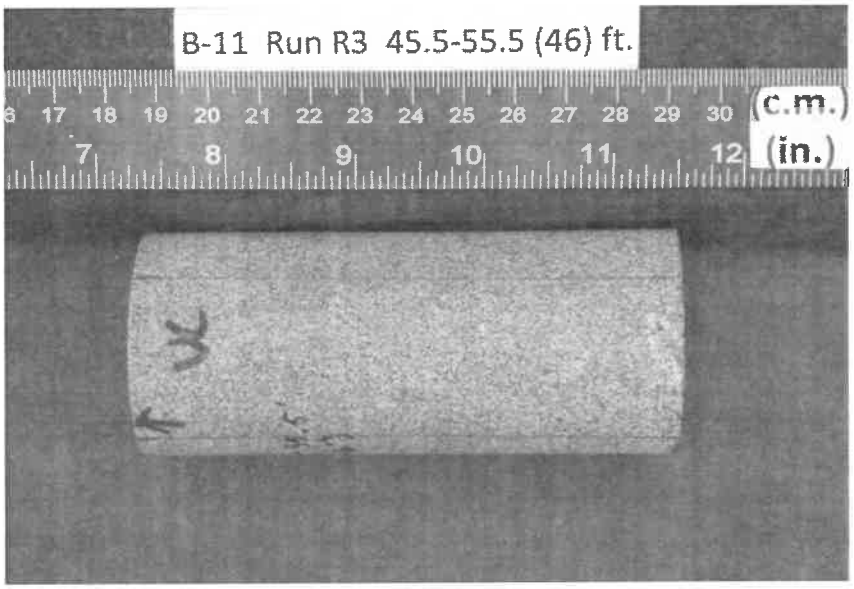
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00110	1.980	0.00056	0.032	YES
Diameter 2, in (rotated 90°)	0.00150	1.980	0.00076	0.043	YES
END 2					
Diameter 1, in	0.00110	1.980	0.00056	0.032	YES
Diameter 2, in (rotated 90°)	0.00140	1.980	0.00071	0.041	YES

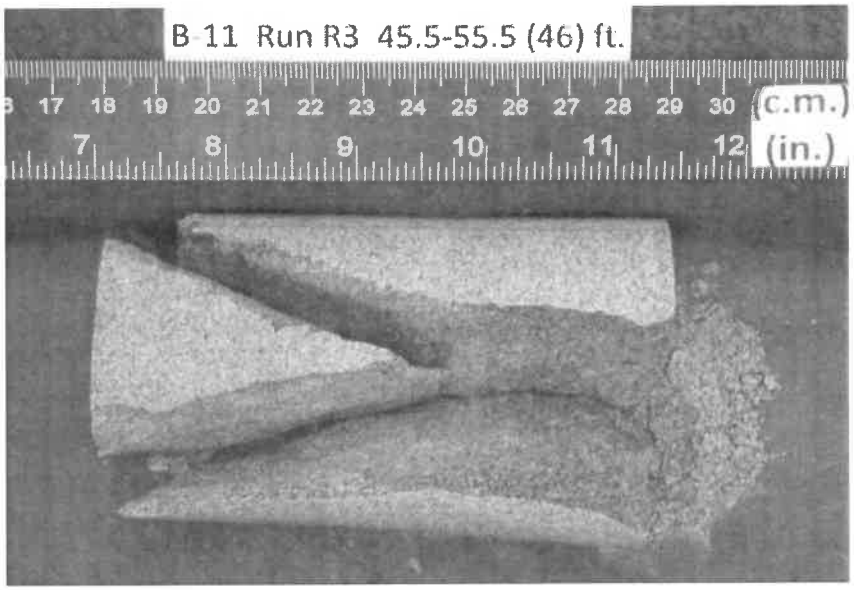
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-11
Sample ID:	Run R3
Depth, ft:	45.5-55.5 (46)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/18/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-11		
Sample ID:	Run R4		
Depth:	55.5-65.5 (63) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.35	4.34	4.35
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	604.66		
Bulk Density, lb/ft^3	172		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

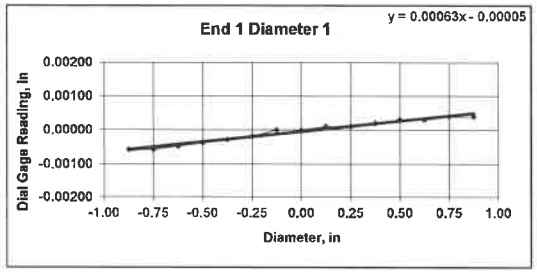
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00060	-0.00060	-0.00050	-0.00040	-0.00030	-0.00020	0.00000	0.00000	0.00010	0.00010	0.00020	0.00030	0.00030	0.00040	0.00040
Diameter 2, in (rotated 90°)	-0.00090	-0.00080	-0.00060	-0.00050	-0.00030	-0.00020	0.00000	0.00000	0.00010	0.00040	0.00040	0.00060	0.00070	0.00080	0.00090

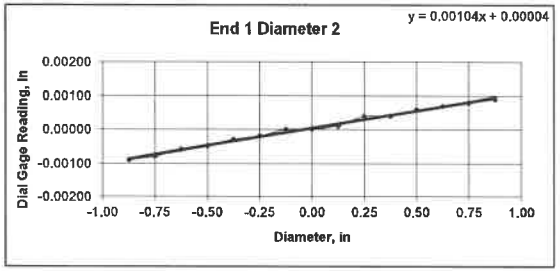
Difference between max and min readings, in: 0° = 0.00100 90° = 0.00180

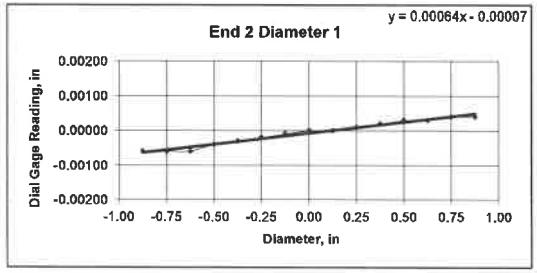
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00060	-0.00060	-0.00060	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00020	0.00030	0.00030	0.00040	0.00040
Diameter 2, in (rotated 90°)	-0.00120	-0.00090	-0.00080	-0.00070	-0.00050	-0.00030	-0.00010	0.00000	0.00010	0.00010	0.00030	0.00040	0.00050	0.00060	0.00070

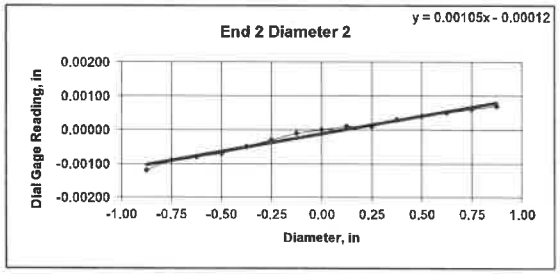
Difference between max and min readings, in: 0° = 0.001 90° = 0.0019

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00063
Angle of Best Fit Line: 0.03610

End 2:
Slope of Best Fit Line 0.00064
Angle of Best Fit Line: 0.03667

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00104
Angle of Best Fit Line: 0.05959

End 2:
Slope of Best Fit Line 0.00105
Angle of Best Fit Line: 0.06016

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

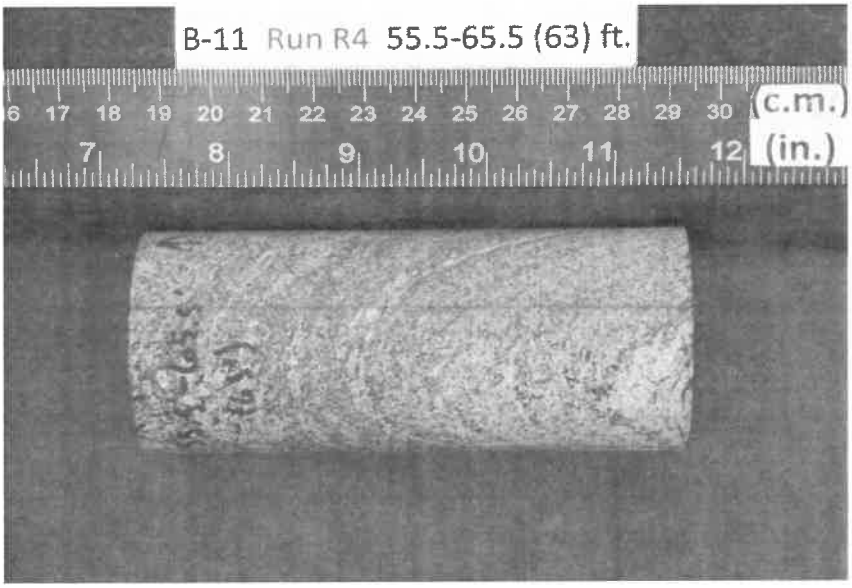
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00100	1.980	0.00051	0.029	YES
Diameter 2, in (rotated 90°)	0.00180	1.980	0.00091	0.052	YES
END 2					
Diameter 1, in	0.00100	1.980	0.00051	0.029	YES
Diameter 2, in (rotated 90°)	0.00190	1.980	0.00096	0.055	YES

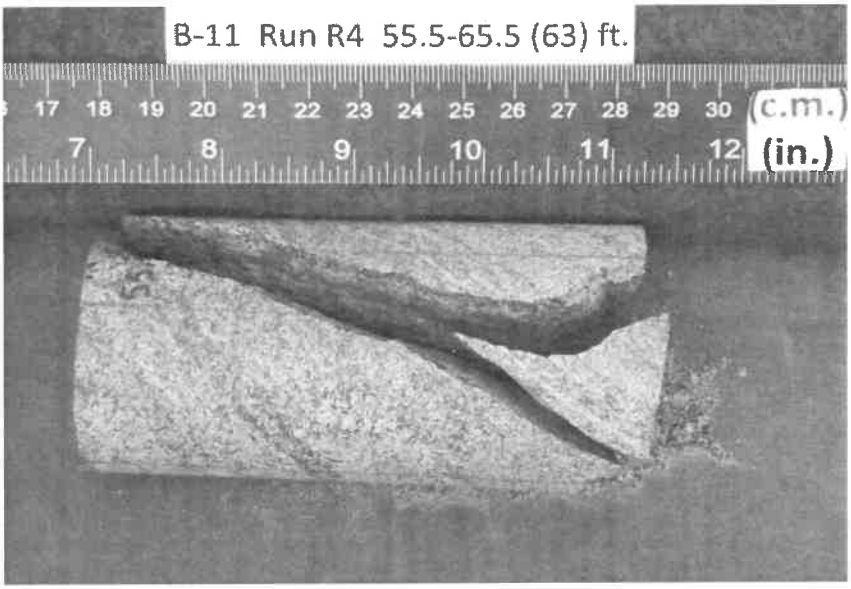
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-11
Sample ID:	Run R4
Depth, ft:	55.5-65.5 (63)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/20/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-11		
Sample ID:	Run R6		
Depth:	75.5-85.5 (80) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.38	4.38	4.38
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	607.36		
Bulk Density, lb/ft³	171		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

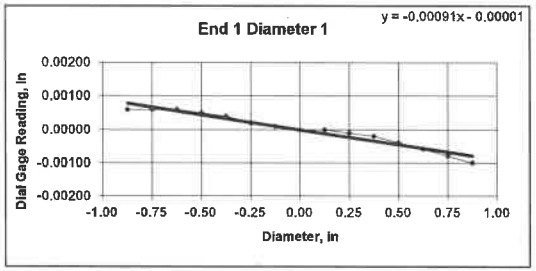
Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

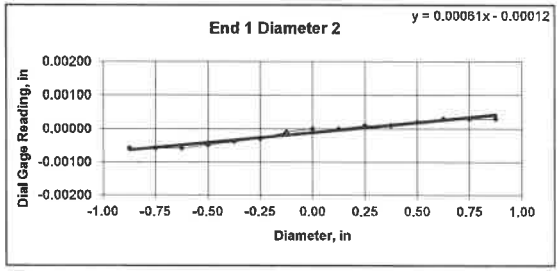
Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

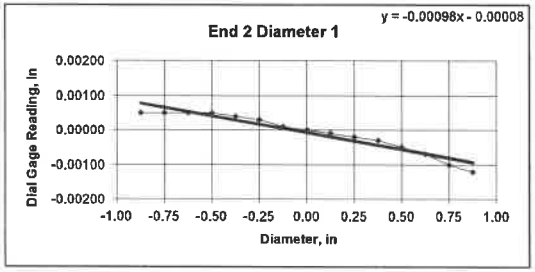
END FLATNESS AND PARALLELISM (Procedure FP1)

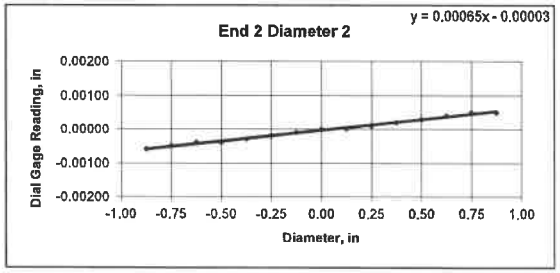
	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
END 1															
Diameter 1, in	0.00060	0.00060	0.00060	0.00050	0.00040	0.00020	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00040	-0.00060	-0.00080	-0.00100
Diameter 2, in (rotated 90°)	-0.00060	-0.00060	-0.00060	-0.00050	-0.00040	-0.00030	-0.00010	0.00000	0.00000	0.00010	0.00010	0.00020	0.00030	0.00030	0.00030
											Difference between max and min readings, in:				
											0° =	0.00160	90° =	0.00090	
END 2															
Diameter 1, in	0.00050	0.00050	0.00050	0.00050	0.00040	0.00030	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00050	-0.00070	-0.00100	-0.00120
Diameter 2, in (rotated 90°)	-0.00060	-0.00050	-0.00040	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00020	0.00030	0.00040	0.00050	0.00050
											Difference between max and min readings, in:				
											0° =	0.0017	90° =	0.0011	

Maximum difference must be < 0.0020 in. Difference = ± 0.00085
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00091
Angle of Best Fit Line: -0.05214

End 2:
Slope of Best Fit Line: -0.00098
Angle of Best Fit Line: -0.05615

Maximum Angular Difference: 0.00401

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: 0.00061
Angle of Best Fit Line: 0.03495

End 2:
Slope of Best Fit Line: 0.00065
Angle of Best Fit Line: 0.03724

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

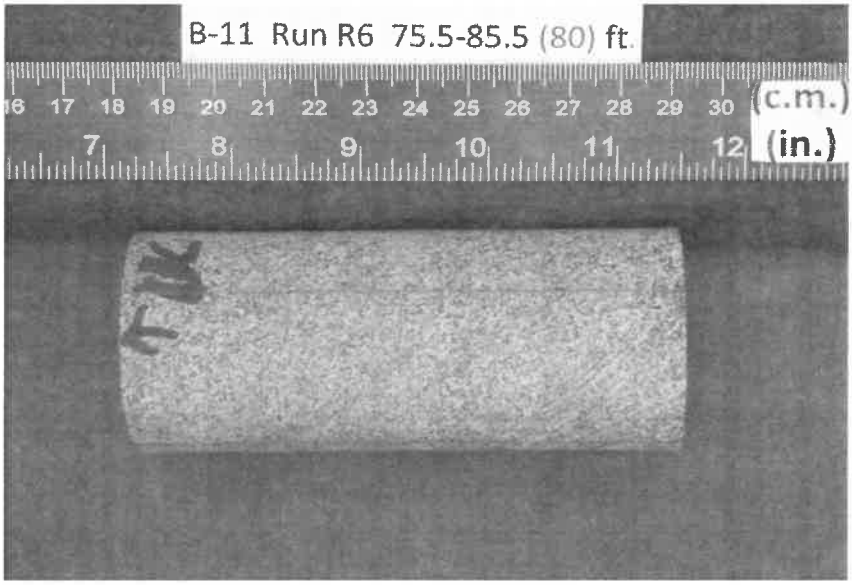
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00160	1.980	0.00081	0.046	YES
Diameter 2, in (rotated 90°)	0.00090	1.980	0.00045	0.026	YES
END 2					
Diameter 1, in	0.00170	1.980	0.00086	0.049	YES
Diameter 2, in (rotated 90°)	0.00110	1.980	0.00056	0.032	YES

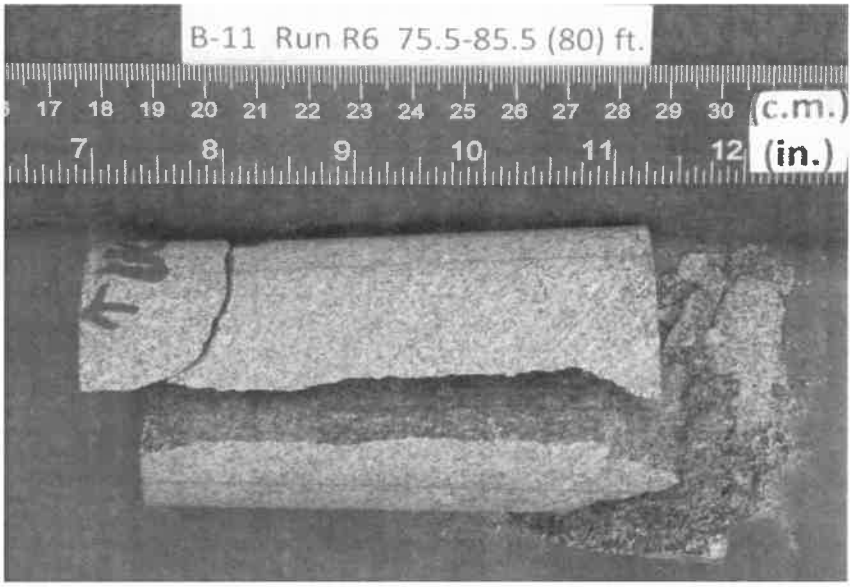
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-11
Sample ID:	Run R6
Depth, ft:	75.5-85.5 (80)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/18/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-11		
Sample ID:	Run R7		
Depth:	85.5-95.5 (88) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.39	4.40	4.40
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	603.65		
Bulk Density, lb/ft^3	170		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

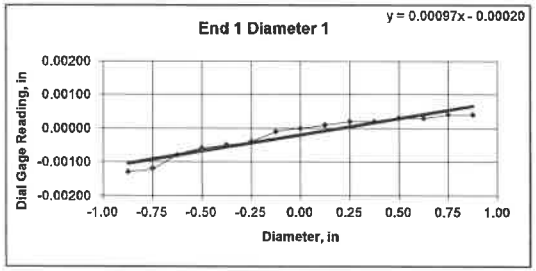
Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

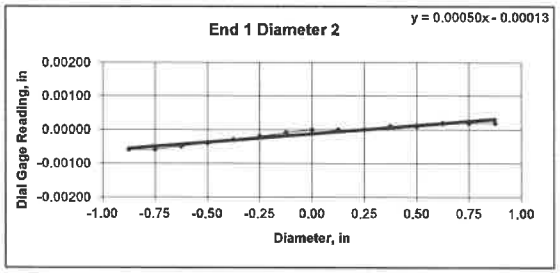
Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

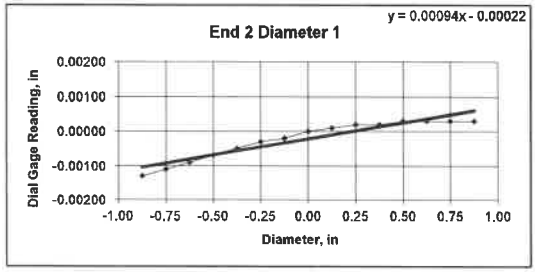
END FLATNESS AND PARALLELISM (Procedure FP1)

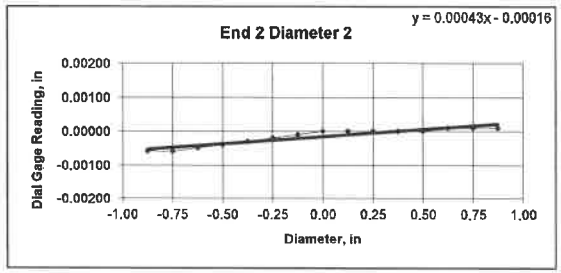
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00130	-0.00120	-0.00080	-0.00060	-0.00050	-0.00040	-0.00010	0.00000	0.00010	0.00020	0.00020	0.00030	0.00030	0.00040	0.00040
Diameter 2, in (rotated 90°)	-0.00060	-0.00060	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00010	0.00020	0.00020	0.00020
											Difference between max and min readings, in:				
											0° =	0.00170	90° =	0.00080	
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00130	-0.00110	-0.00090	-0.00070	-0.00050	-0.00030	-0.00020	0.00000	0.00010	0.00020	0.00020	0.00030	0.00030	0.00030	0.00030
Diameter 2, in (rotated 90°)	-0.00060	-0.00060	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010
											Difference between max and min readings, in:				
											0° =	0.0016	90° =	0.0007	

Maximum difference must be < 0.0020 in. Difference = ± 0.00085
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00097
Angle of Best Fit Line: 0.05558

End 2:
Slope of Best Fit Line 0.00094
Angle of Best Fit Line: 0.05386

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00050
Angle of Best Fit Line: 0.02865

End 2:
Slope of Best Fit Line 0.00043
Angle of Best Fit Line: 0.02464

Maximum Angular Difference: 0.00401

Parallelism Tolerance Met? **YES**
Spherically Seated

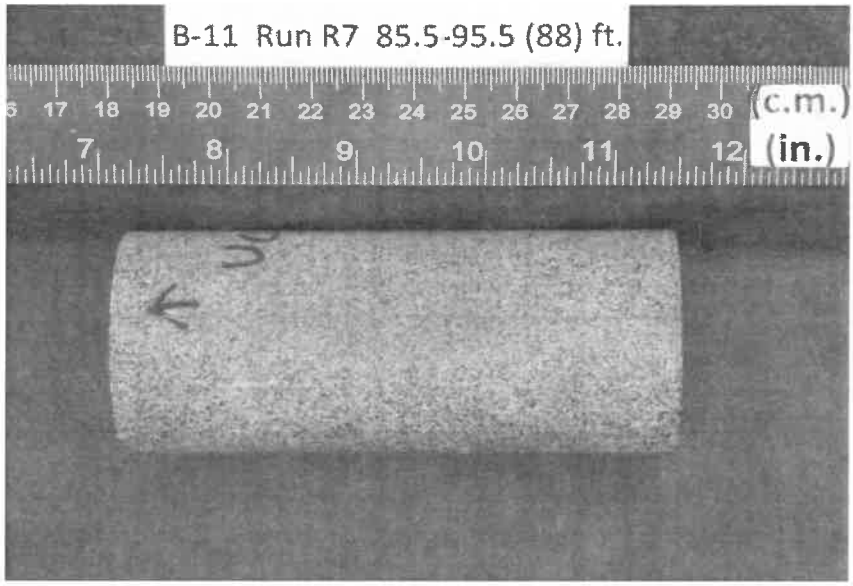
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00170	1.980	0.00086	0.049	YES
Diameter 2, in (rotated 90°)	0.00080	1.980	0.00040	0.023	YES
END 2					
Diameter 1, in	0.00160	1.980	0.00081	0.046	YES
Diameter 2, in (rotated 90°)	0.00070	1.980	0.00035	0.020	YES

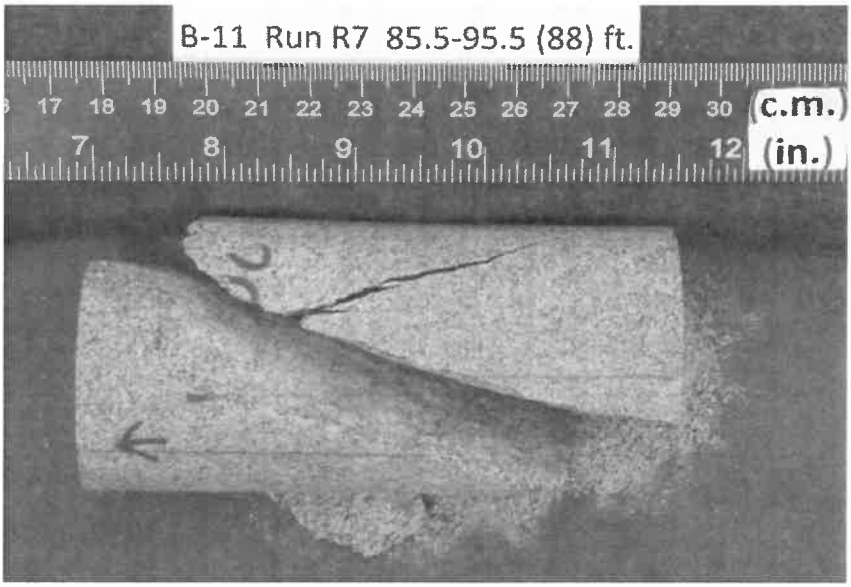
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-11
Sample ID:	Run R7
Depth, ft:	85.5-95.5 (88)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/18/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-11		
Sample ID:	Run R8		
Depth:	95.5-105.5 (97 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.39	4.39	4.39
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	609.92		
Bulk Density, lb/ft^3	172		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

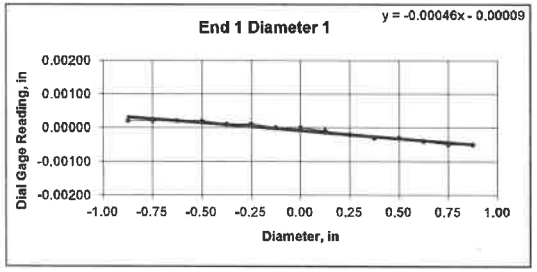
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00020	0.00020	0.00020	0.00020	0.00010	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00030	-0.00040	-0.00050	-0.00050
Diameter 2, in (rotated 90°)	-0.00020	-0.00020	-0.00020	-0.00020	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

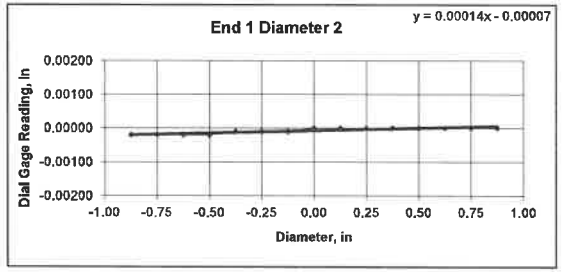
Difference between max and min readings, in: 0° = 0.00070 90° = 0.00020

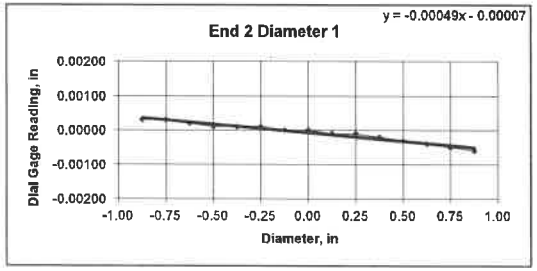
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00030	0.00030	0.00020	0.00010	0.00010	0.00010	0.00000	0.00000	-0.00010	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00060
Diameter 2, in (rotated 90°)	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010

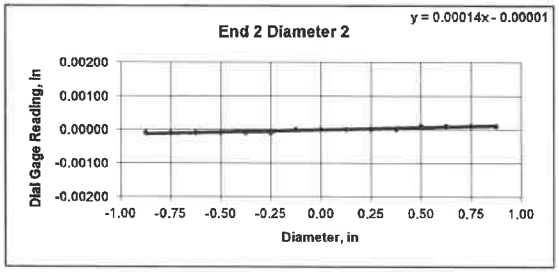
Difference between max and min readings, in: 0° = 0.0009 90° = 0.0002

Maximum difference must be < 0.0020 in. Difference = ± 0.00045
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00046
Angle of Best Fit Line: -0.02636

End 2:
Slope of Best Fit Line -0.00049
Angle of Best Fit Line: -0.02807

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00014
Angle of Best Fit Line: 0.00802

End 2:
Slope of Best Fit Line 0.00014
Angle of Best Fit Line: 0.00802

Maximum Angular Difference: 0.00000

Parallelism Tolerance Met? **YES**
Spherically Seated

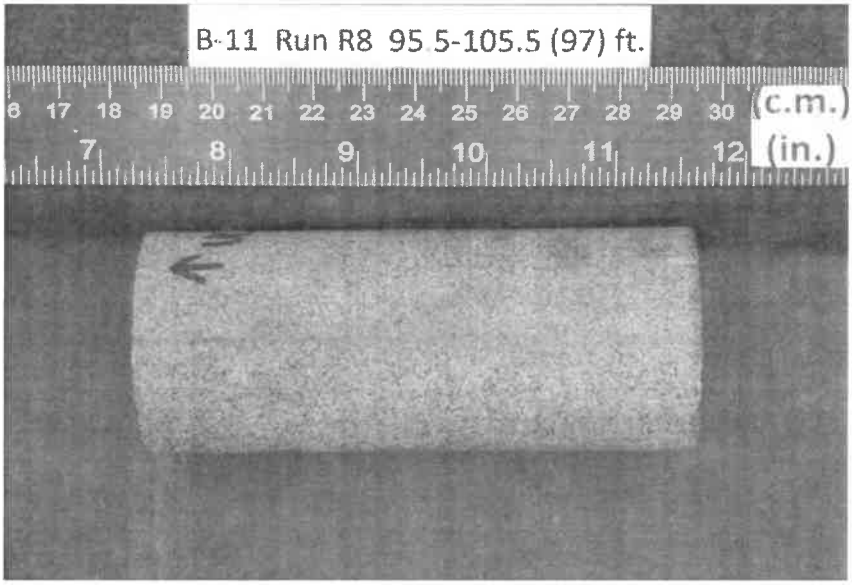
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00070	1.980	0.00035	0.020	YES
Diameter 2, in (rotated 90°)	0.00020	1.980	0.00010	0.006	YES
END 2					
Diameter 1, in	0.00090	1.980	0.00045	0.026	YES
Diameter 2, in (rotated 90°)	0.00020	1.980	0.00010	0.006	YES

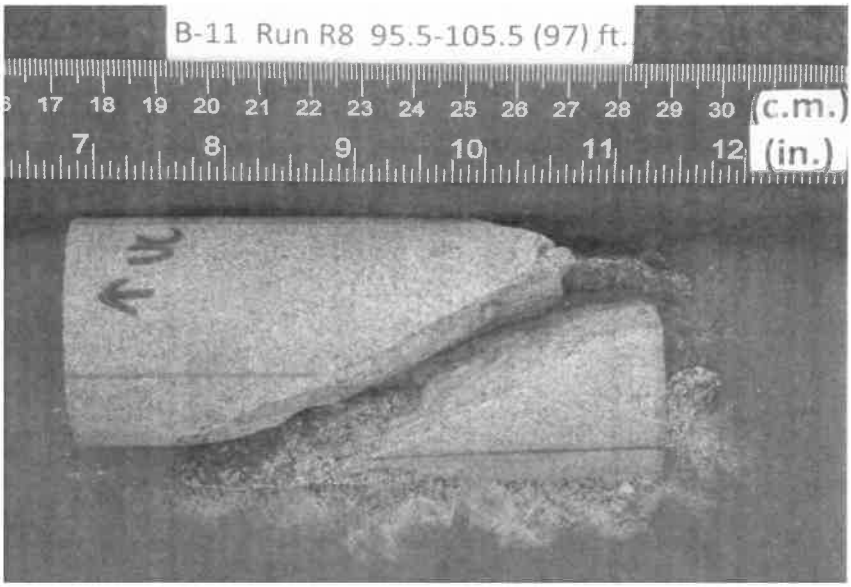
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-11
Sample ID:	Run R8
Depth, ft:	95.5-105.5 (97)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/18/12-7/23/12
Tested By:	daa
Checked By:	njh

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-12	Run R4	55-65 (56)	169	18,143	1	YES
B-12	Run R5 (A)	65-75 (70)	167	16,287	1	YES
B-12	Run R5 (B)	65-75 (73)	174	11,735	1	YES
B-12	Run R13	145-155 (152.25)	173	17,787	1	YES

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.
All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.
Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/18/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-12		
Sample ID:	Run R4		
Depth:	55-65 (56) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.38	4.38	4.38
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	604.33		
Bulk Density, lb/ft^3	169		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

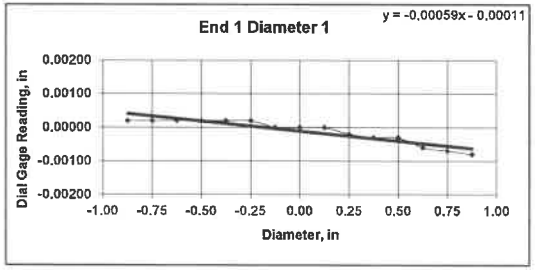
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00000	0.00000	0.00000	-0.00020	-0.00030	-0.00030	-0.00060	-0.00070	-0.00080
Diameter 2, in (rotated 90°)	0.00080	0.00080	0.00070	0.00050	0.00040	0.00030	0.00010	0.00000	0.00000	-0.00010	-0.00030	-0.00050	-0.00060	-0.00080	-0.00090

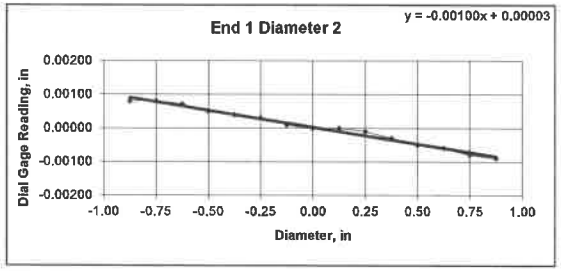
Difference between max and min readings, in:
0° = 0.00100 90° = 0.00170

END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00030	0.00030	0.00030	0.00030	0.00030	0.00020	0.00010	0.00000	0.00000	0.00000	-0.00020	-0.00020	-0.00040	-0.00050	-0.00070
Diameter 2, in (rotated 90°)	0.00080	0.00080	0.00070	0.00060	0.00040	0.00030	0.00010	0.00000	0.00000	-0.00020	-0.00030	-0.00040	-0.00060	-0.00090	-0.00100

Difference between max and min readings, in:
0° = 0.001 90° = 0.0018

Maximum difference must be < 0.0020 in. Difference = ± 0.00090
Flatness Tolerance Met? **YES**





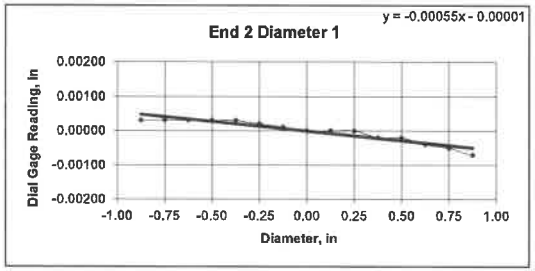
DIAMETER 1

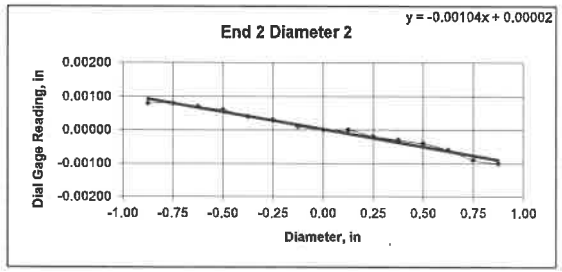
End 1:
Slope of Best Fit Line -0.00059
Angle of Best Fit Line: -0.03380

End 2:
Slope of Best Fit Line -0.00055
Angle of Best Fit Line: -0.03151

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated





DIAMETER 2

End 1:
Slope of Best Fit Line -0.00100
Angle of Best Fit Line: -0.05730

End 2:
Slope of Best Fit Line -0.00104
Angle of Best Fit Line: -0.05959

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

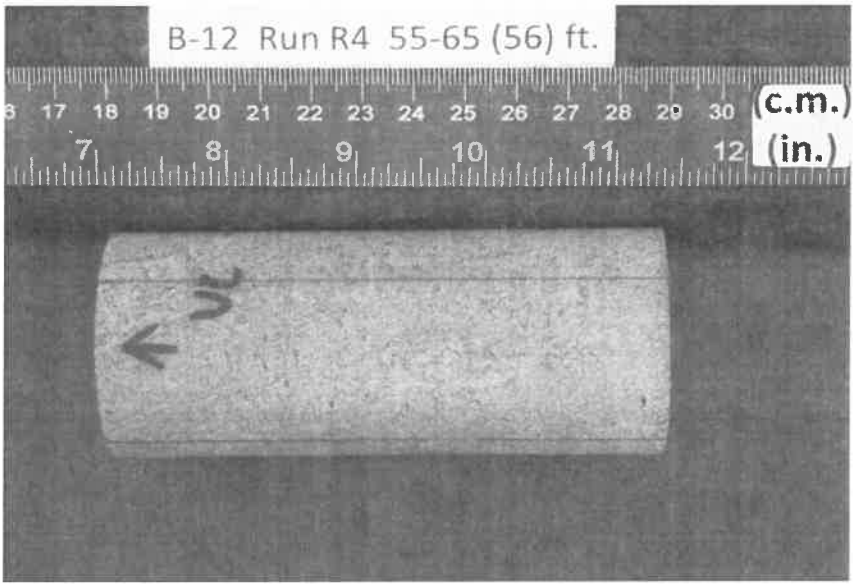
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00100	1.990	0.00050	0.029	YES
Diameter 2, in (rotated 90°)	0.00170	1.990	0.00085	0.049	YES
END 2					
Diameter 1, in	0.00100	1.990	0.00050	0.029	YES
Diameter 2, in (rotated 90°)	0.00180	1.990	0.00090	0.052	YES

Maximum angle of departure must be ≤ 0.25°

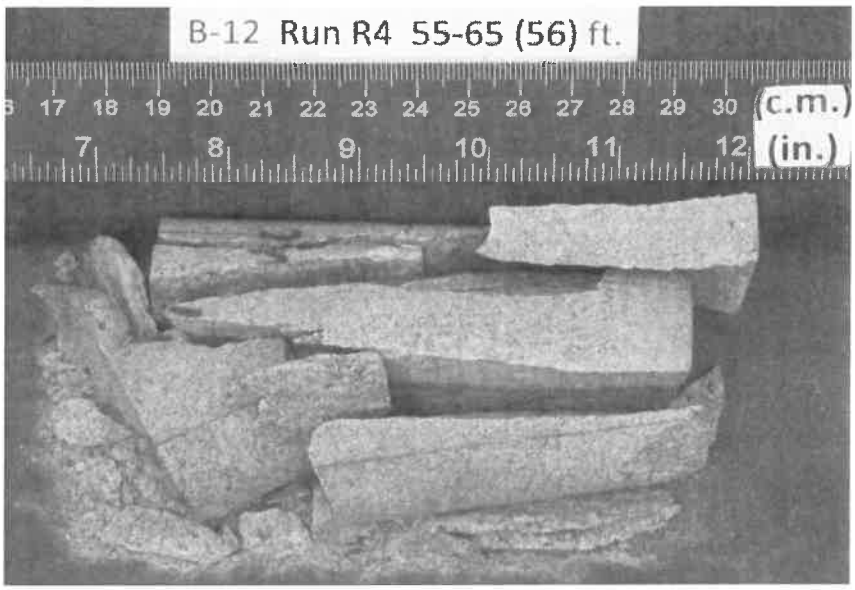
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-12
Sample ID:	Run R4
Depth, ft:	55-65 (56)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/20/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-12		
Sample ID:	Run R5 (A)		
Depth:	65-75 (70) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.37	4.37	4.37
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	598.33		
Bulk Density, lb/ft^3	167		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

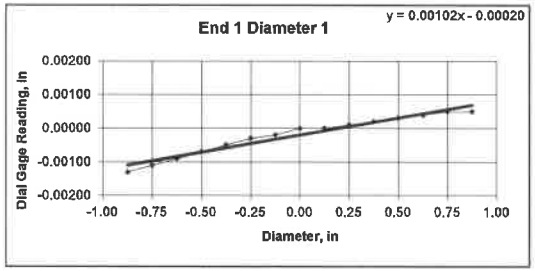
Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

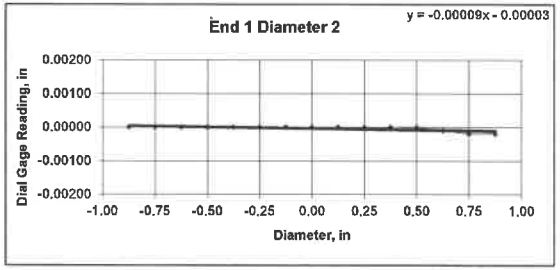
Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

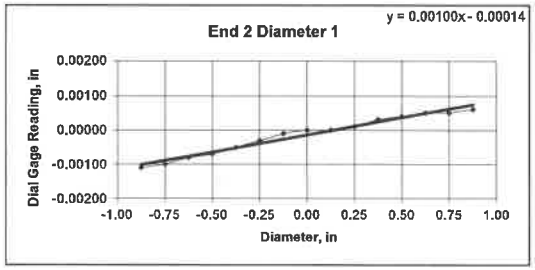
END FLATNESS AND PARALLELISM (Procedure FP1)

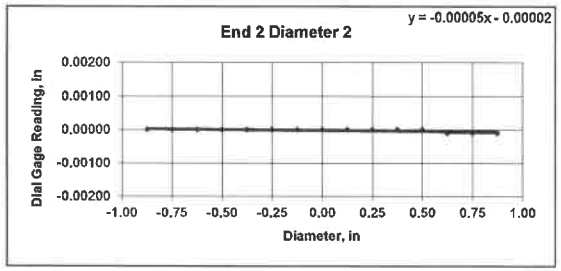
	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
END 1															
Diameter 1, in	-0.00130	-0.00110	-0.00090	-0.00070	-0.00050	-0.00030	-0.00020	0.00000	0.00000	0.00010	0.00020	0.00030	0.00040	0.00050	0.00050
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020
Difference between max and min readings, in:											0° =	0.00180	90° =	0.00020	
END 2															
Diameter 1, in	-0.00110	-0.00100	-0.00080	-0.00070	-0.00050	-0.00030	-0.00010	0.00000	0.00000	0.00010	0.00030	0.00040	0.00050	0.00050	0.00060
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00010
Difference between max and min readings, in:											0° =	0.0017	90° =	0.0001	

Maximum difference must be < 0.0020 in. Difference = ± 0.00090
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00102
Angle of Best Fit Line: 0.05844

End 2:
Slope of Best Fit Line 0.00100
Angle of Best Fit Line: 0.05730

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00009
Angle of Best Fit Line: -0.00516

End 2:
Slope of Best Fit Line -0.00005
Angle of Best Fit Line: -0.00286

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

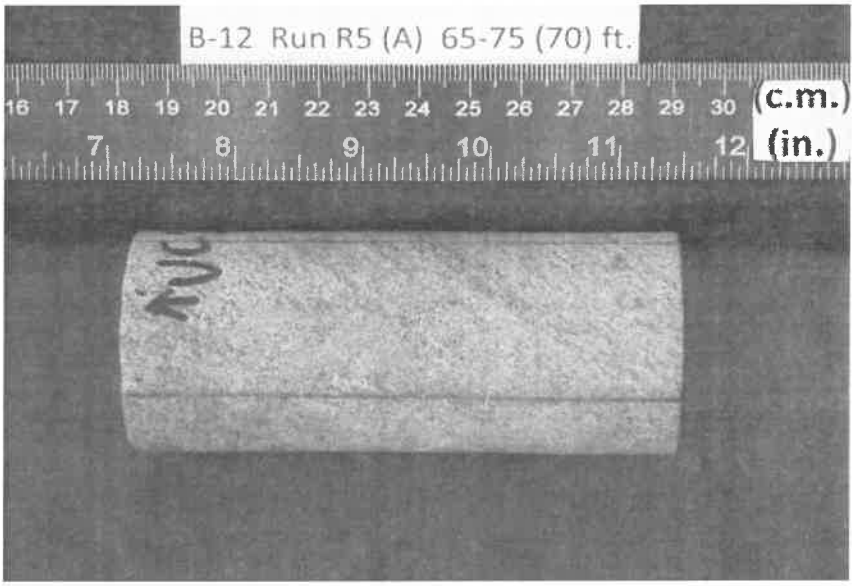
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00180	1.990	0.00090	0.052	YES
Diameter 2, in (rotated 90°)	0.00020	1.990	0.00010	0.006	YES
END 2					
Diameter 1, in	0.00170	1.990	0.00085	0.049	YES
Diameter 2, in (rotated 90°)	0.00010	1.990	0.00005	0.003	YES

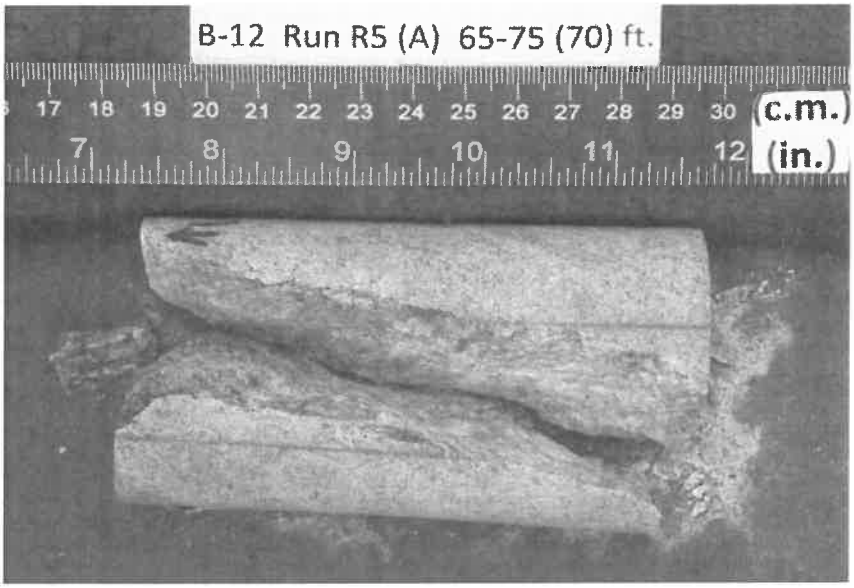
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-12
Sample ID:	Run R5 (A)
Depth, ft:	65-75 (70)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/20/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-12		
Sample ID:	Run R5 (B)		
Depth:	65-75 (73) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.33	4.33	4.33
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	615.07		
Bulk Density, lb/ft³	174		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

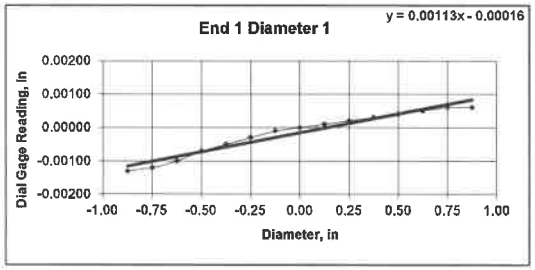
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00130	-0.00120	-0.00100	-0.00070	-0.00050	-0.00030	-0.00010	0.00000	0.00010	0.00020	0.00030	0.00040	0.00050	0.00060	0.00060
Diameter 2, in (rotated 90°)	0.00020	0.00020	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	-0.00010	-0.00030	-0.00030	-0.00040	-0.00040	-0.00050	-0.00060

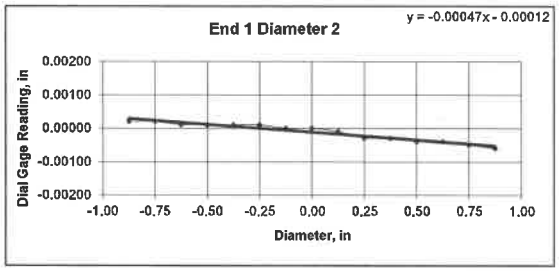
Difference between max and min readings, in:
0° = 0.00190 90° = 0.00080

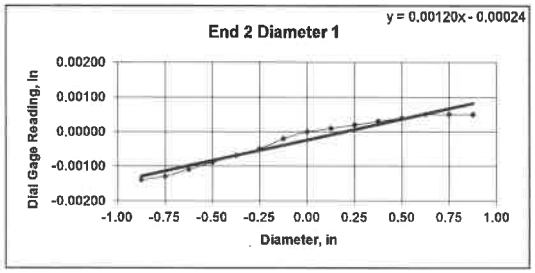
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00140	-0.00130	-0.00110	-0.00090	-0.00070	-0.00050	-0.00020	0.00000	0.00010	0.00020	0.00030	0.00040	0.00050	0.00050	0.00050
Diameter 2, in (rotated 90°)	0.00020	0.00020	0.00020	0.00020	0.00020	0.00010	0.00010	0.00000	0.00000	0.00000	-0.00020	-0.00040	-0.00050	-0.00060	-0.00070

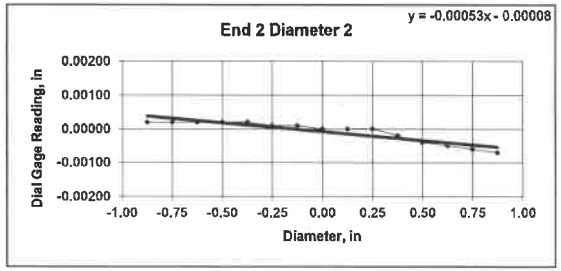
Difference between max and min readings, in:
0° = 0.0019 90° = 0.0009

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00113
Angle of Best Fit Line: 0.06474

End 2:
Slope of Best Fit Line 0.00120
Angle of Best Fit Line: 0.06875

Maximum Angular Difference: 0.00401

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00047
Angle of Best Fit Line: -0.02693

End 2:
Slope of Best Fit Line -0.00053
Angle of Best Fit Line: -0.03037

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

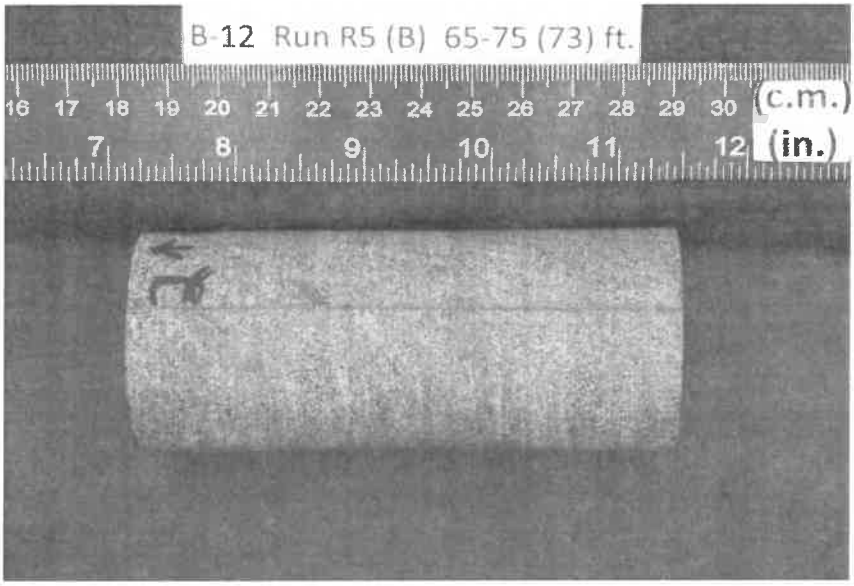
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00190	1.990	0.00095	0.055	YES
Diameter 2, in (rotated 90°)	0.00080	1.990	0.00040	0.023	YES
END 2					
Diameter 1, in	0.00190	1.990	0.00095	0.055	YES
Diameter 2, in (rotated 90°)	0.00090	1.990	0.00045	0.026	YES

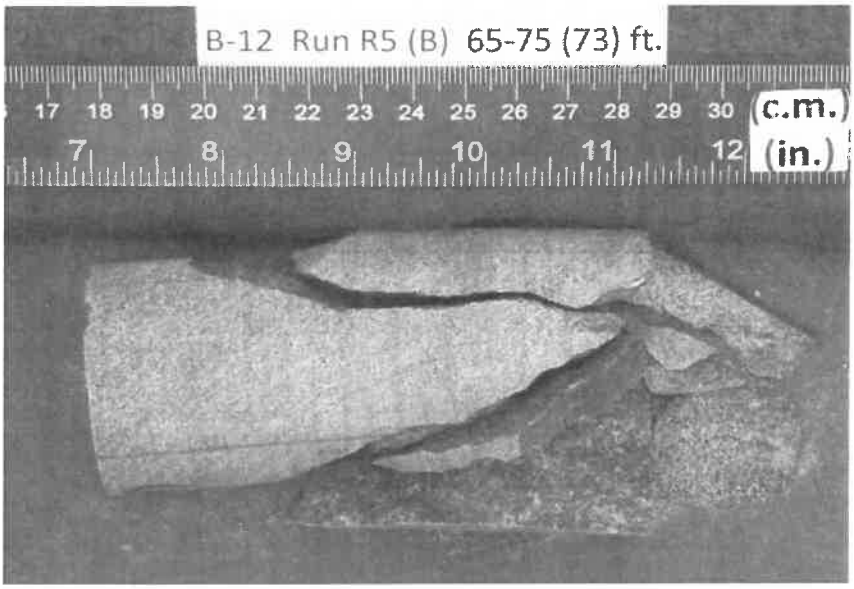
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-12
Sample ID:	Run R5 (B)
Depth, ft:	65-75 (73)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/18/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-12		
Sample ID:	Run R13		
Depth:	145-155 (152.25- ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.40	4.40	4.40
Specimen Diameter, in:	1.99	2.00	2.00
Specimen Mass, g:	629.22		
Bulk Density, lb/ft³	174		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

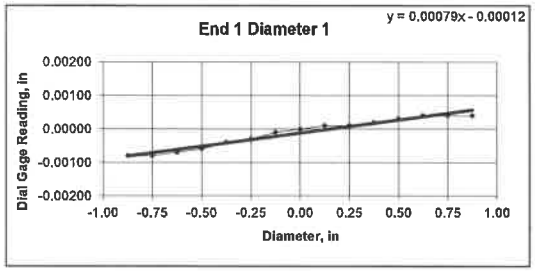
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00080	-0.00080	-0.00070	-0.00060	-0.00040	-0.00030	-0.00010	0.00000	0.00010	0.00010	0.00020	0.00030	0.00040	0.00040	0.00040
Diameter 2, in (rotated 90°)	-0.00070	-0.00070	-0.00060	-0.00040	-0.00030	-0.00010	-0.00010	0.00000	0.00000	0.00010	0.00020	0.00030	0.00030	0.00040	0.00040

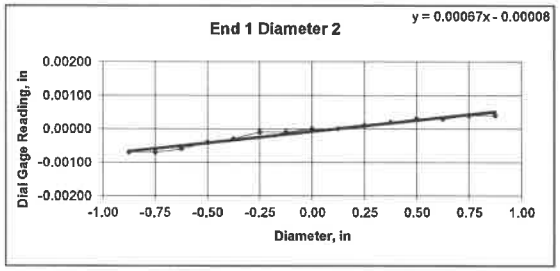
Difference between max and min readings, in:
0° = 0.00120 90° = 0.00110

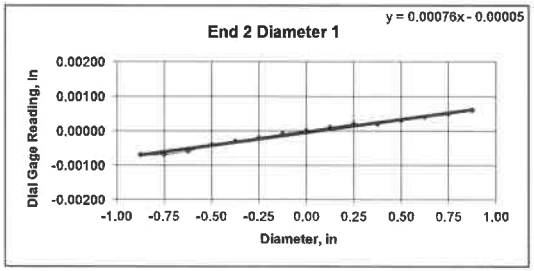
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00070	-0.00070	-0.00060	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00010	0.00020	0.00020	0.00030	0.00040	0.00050	0.00060
Diameter 2, in (rotated 90°)	-0.00080	-0.00070	-0.00060	-0.00050	-0.00040	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00010	0.00020	0.00030	0.00040	0.00040

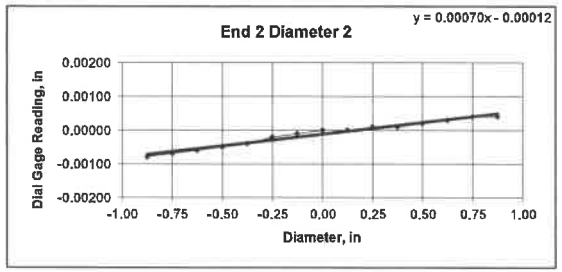
Difference between max and min readings, in:
0° = 0.0013 90° = 0.0012

Maximum difference must be < 0.0020 in. Difference = ± 0.00065
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00079
Angle of Best Fit Line: 0.04526

End 2:
Slope of Best Fit Line 0.00076
Angle of Best Fit Line: 0.04354

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00067
Angle of Best Fit Line: 0.03839

End 2:
Slope of Best Fit Line 0.00070
Angle of Best Fit Line: 0.04011

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

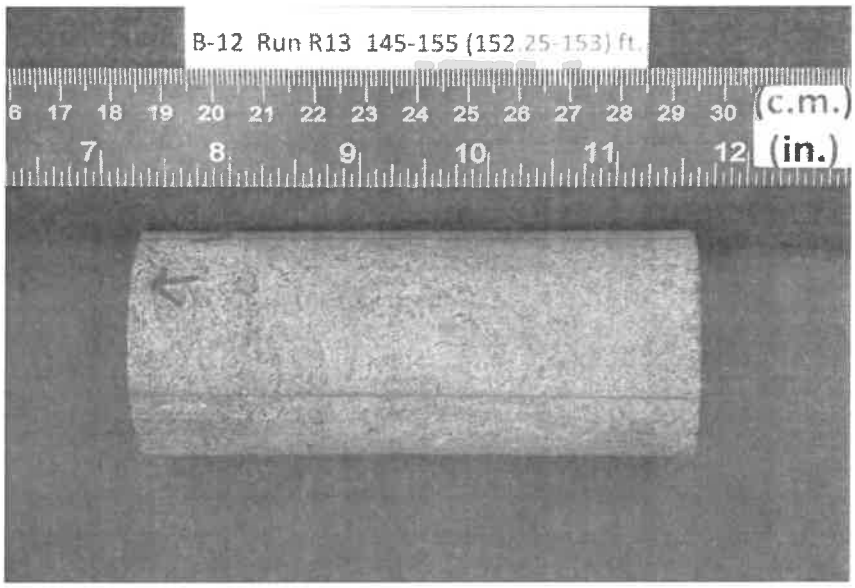
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00120	1.995	0.00060	0.034	YES
Diameter 2, in (rotated 90°)	0.00110	1.995	0.00055	0.032	YES
END 2					
Diameter 1, in	0.00130	1.995	0.00065	0.037	YES
Diameter 2, in (rotated 90°)	0.00120	1.995	0.00060	0.034	YES

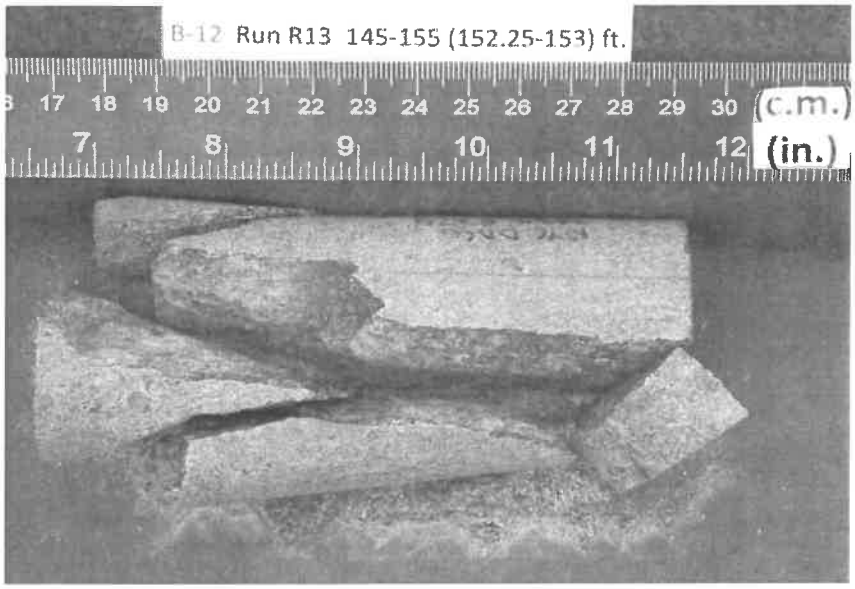
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-12
Sample ID:	Run R13
Depth, ft:	145-155 (152.25-153)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/18/12-7/23/12
Tested By:	daa
Checked By:	njh

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-13	Run R6 (A)	60-70 (66-66.5)	170	9,762	2	YES
B-13	Run R6 (B)	60-70 (67-67.5)	168	4,371	2	YES
B-13	Run R7 (A)	70-80 (74.5-75)	172	7,974	2	YES
B-13	Run R7 (B)	70-80 (75.5-76)	174	7,039	2	YES

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.
All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.
Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/20/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-13		
Sample ID:	Run R6 (A)		
Depth:	60-70 (66-66.5 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.37	4.37	4.37
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	606.35		
Bulk Density, lb/ft³	170		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

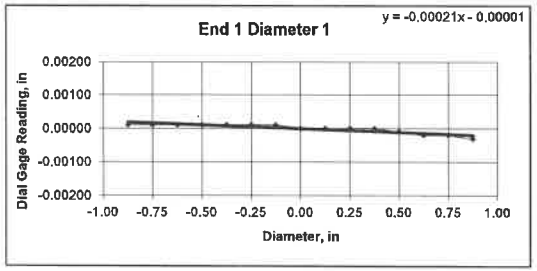
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020	-0.00030
Diameter 2, in (rotated 90°)	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00070

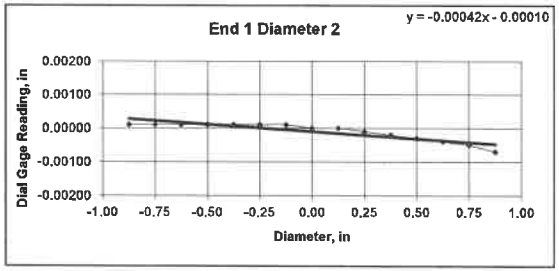
Difference between max and min readings, in:
0° = 0.00040 90° = 0.00080

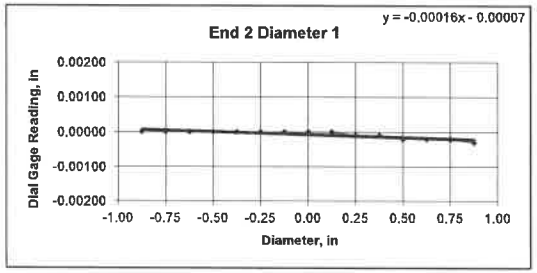
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00020	-0.00020	-0.00020	-0.00030
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00070	-0.00080

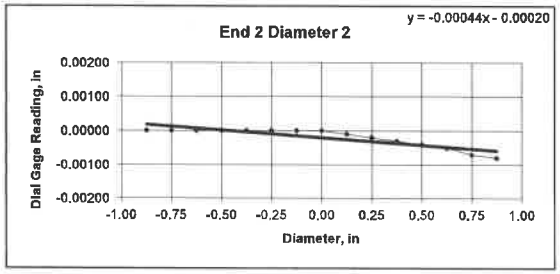
Difference between max and min readings, in:
0° = 0.0003 90° = 0.0008

Maximum difference must be < 0.0020 in. Difference = ± 0.00040
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00021
Angle of Best Fit Line: -0.01203

End 2:
Slope of Best Fit Line -0.00016
Angle of Best Fit Line: -0.00917

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00042
Angle of Best Fit Line: -0.02406

End 2:
Slope of Best Fit Line -0.00044
Angle of Best Fit Line: -0.02521

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

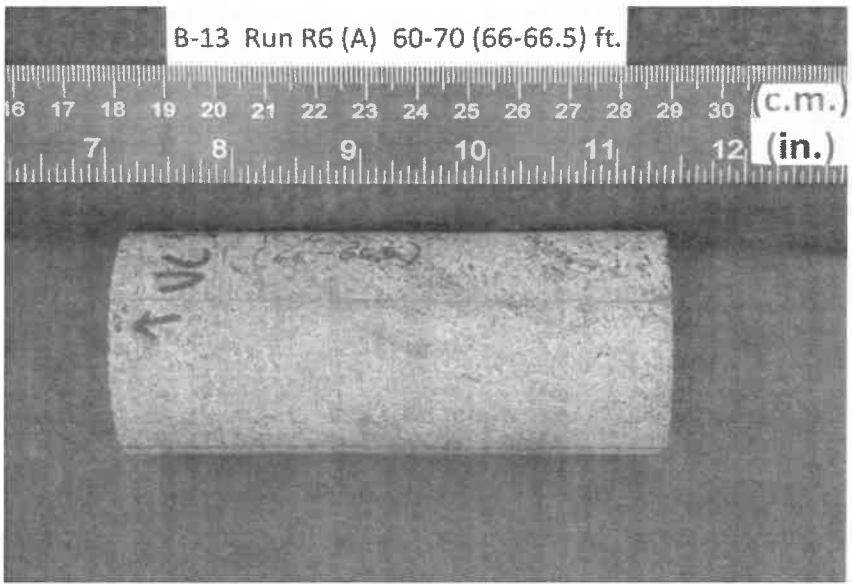
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00040	1.990	0.00020	0.012	YES
Diameter 2, in (rotated 90°)	0.00080	1.990	0.00040	0.023	YES
END 2					
Diameter 1, in	0.00030	1.990	0.00015	0.009	YES
Diameter 2, in (rotated 90°)	0.00080	1.990	0.00040	0.023	YES

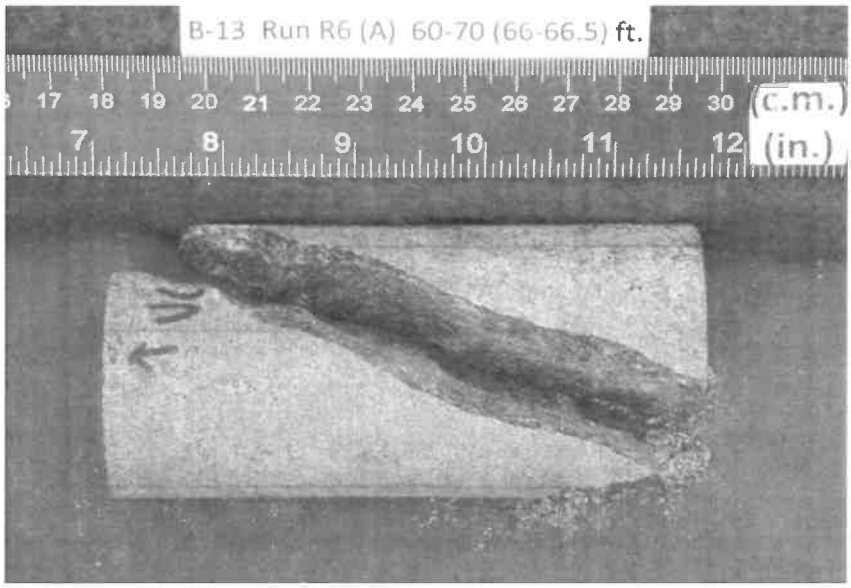
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-13
Sample ID:	Run R6 (A)
Depth, ft:	60-70 (66-66.5)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/20/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-13		
Sample ID:	Run R6 (B)		
Depth:	60-70 (67-67.5 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.34	4.34	4.34
Specimen Diameter, in:	1.98	1.99	1.99
Specimen Mass, g:	597.92		
Bulk Density, lb/ft^3	169		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

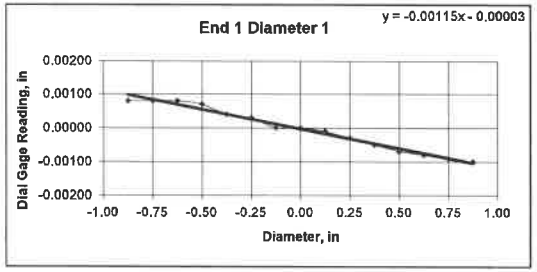
Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

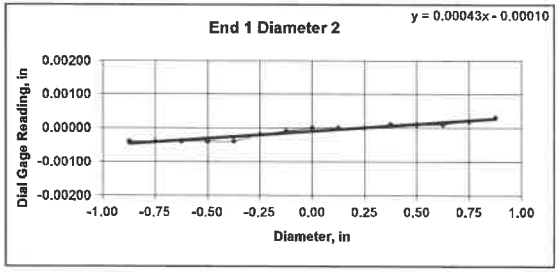
Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

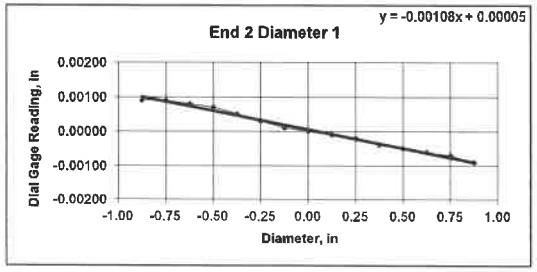
END FLATNESS AND PARALLELISM (Procedure FP1)

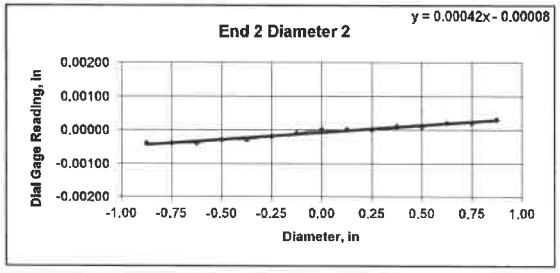
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00080	0.00080	0.00080	0.00070	0.00040	0.00030	0.00000	0.00000	-0.00010	-0.00030	-0.00050	-0.00070	-0.00080	-0.00090	-0.00100
Diameter 2, in (rotated 90°)	-0.00040	-0.00040	-0.00040	-0.00040	-0.00040	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00020	0.00030
											Difference between max and min readings, in:				
											0° =	0.00180	90° =	0.00070	
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00090	0.00090	0.00080	0.00070	0.00050	0.00030	0.00010	0.00000	-0.00010	-0.00020	-0.00040	-0.00050	-0.00060	-0.00070	-0.00090
Diameter 2, in (rotated 90°)	-0.00040	-0.00040	-0.00040	-0.00030	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00010	0.00020	0.00020	0.00030
											Difference between max and min readings, in:				
											0° =	0.0018	90° =	0.0007	

Maximum difference must be < 0.0020 in. Difference = ± 0.00090
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00115
Angle of Best Fit Line: -0.06589

End 2:
Slope of Best Fit Line: -0.00108
Angle of Best Fit Line: -0.06188

Maximum Angular Difference: 0.00401

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: 0.00043
Angle of Best Fit Line: 0.02464

End 2:
Slope of Best Fit Line: 0.00042
Angle of Best Fit Line: 0.02406

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

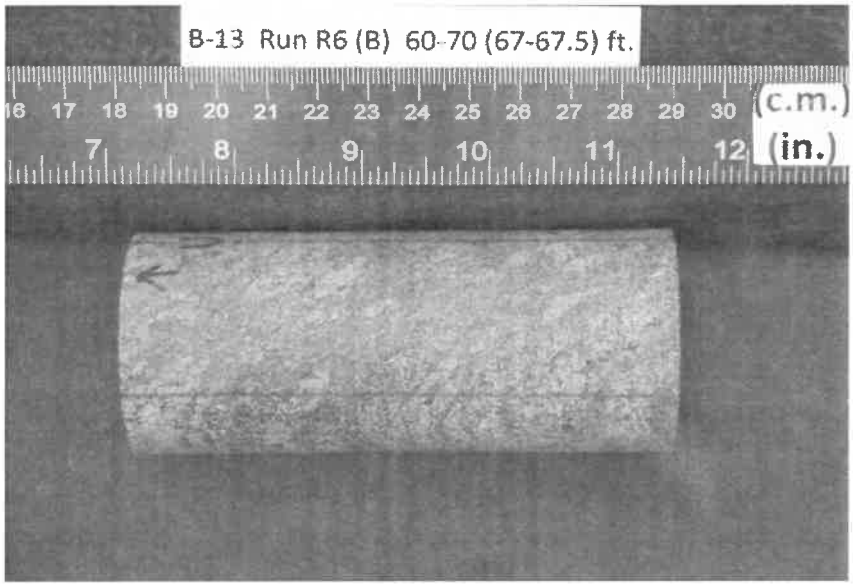
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00180	1.985	0.00091	0.052	YES
Diameter 2, in (rotated 90°)	0.00070	1.985	0.00035	0.020	YES
END 2					
Diameter 1, in	0.00180	1.985	0.00091	0.052	YES
Diameter 2, in (rotated 90°)	0.00070	1.985	0.00035	0.020	YES

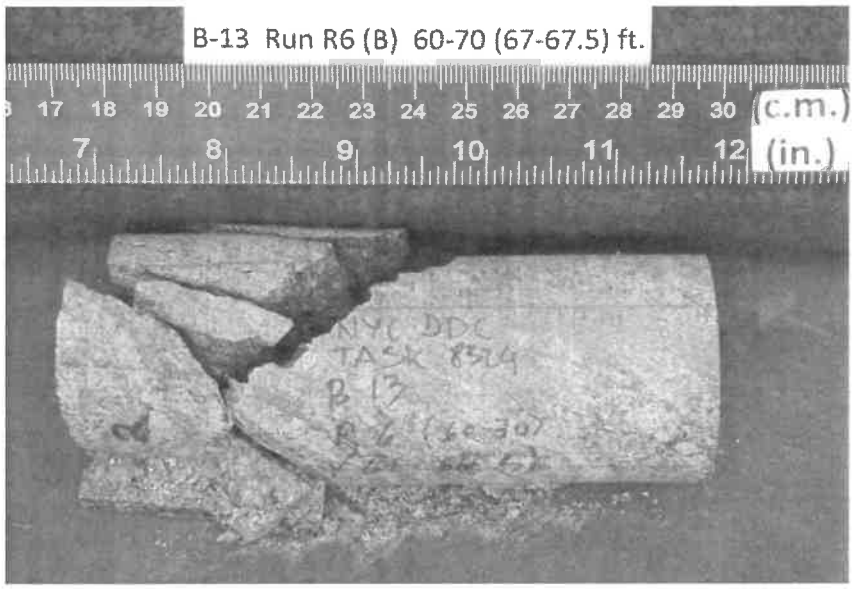
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-13
Sample ID:	Run R6 (B)
Depth, ft:	60-70 (67-67.5)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/18/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-13		
Sample ID:	Run R7 (A)		
Depth:	70-80 (74.5-75 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.31	4.32	4.32
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	607.97		
Bulk Density, lb/ft^3	172		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

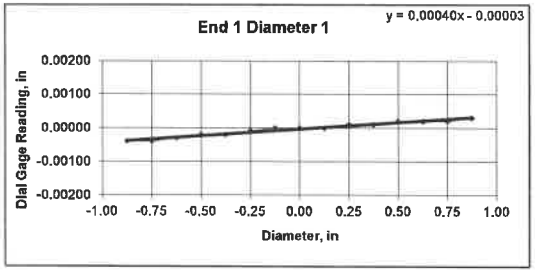
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00040	-0.00040	-0.00030	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00010	0.00020	0.00020	0.00020	0.00030
Diameter 2, in (rotated 90°)	-0.00100	-0.00080	-0.00070	-0.00050	-0.00030	-0.00020	-0.00010	0.00000	0.00010	0.00020	0.00040	0.00060	0.00060	0.00070	0.00090

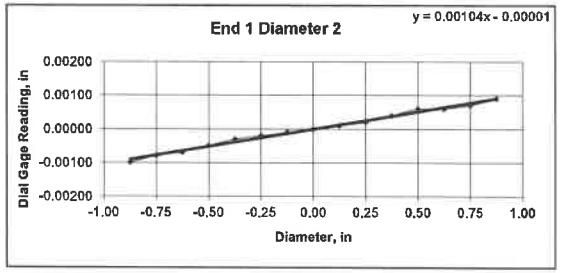
Difference between max and min readings, in: 0° = 0.00070 90° = 0.00190

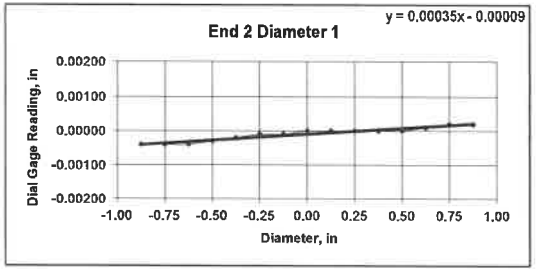
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00040	-0.00040	-0.00040	-0.00030	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00020	0.00020
Diameter 2, in (rotated 90°)	-0.00100	-0.00090	-0.00070	-0.00060	-0.00040	-0.00030	-0.00010	0.00000	0.00000	0.00020	0.00040	0.00040	0.00060	0.00070	0.00080

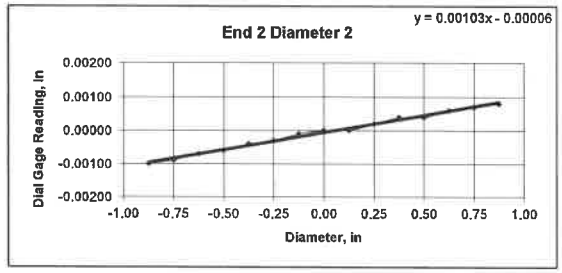
Difference between max and min readings, in: 0° = 0.0006 90° = 0.0018

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00040
Angle of Best Fit Line: 0.02292

End 2:
Slope of Best Fit Line 0.00035
Angle of Best Fit Line: 0.02005

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00104
Angle of Best Fit Line: 0.05959

End 2:
Slope of Best Fit Line 0.00103
Angle of Best Fit Line: 0.05901

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

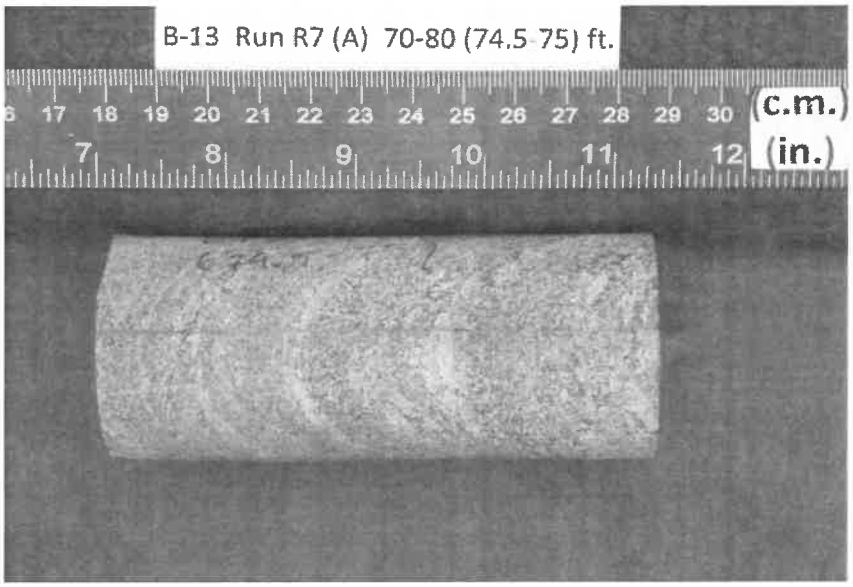
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00070	1.990	0.00035	0.020	YES
Diameter 2, in (rotated 90°)	0.00190	1.990	0.00095	0.055	YES
END 2					
Diameter 1, in	0.00060	1.990	0.00030	0.017	YES
Diameter 2, in (rotated 90°)	0.00180	1.990	0.00090	0.052	YES

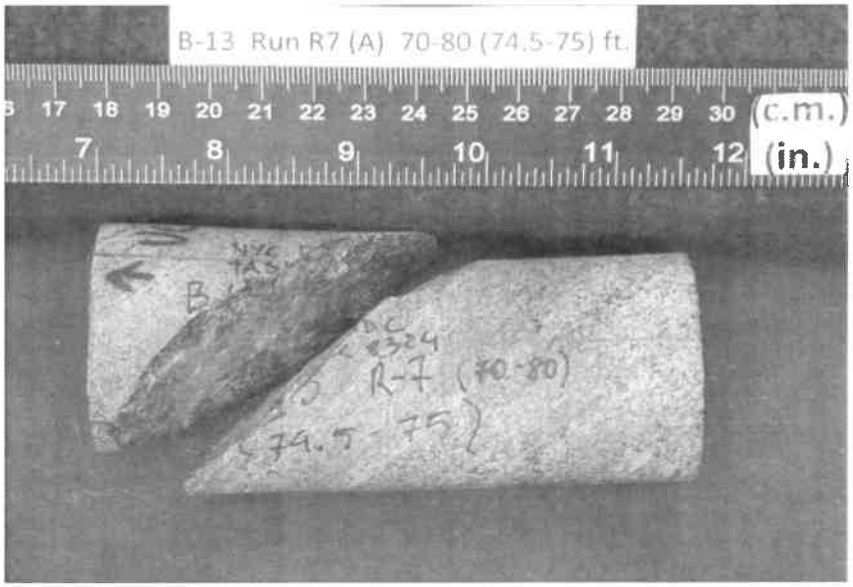
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-13
Sample ID:	Run R7 (A)
Depth, ft:	70-80 (74.5-75)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM	Test Date:	7/18/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-13		
Sample ID:	Run R7 (B)		
Depth:	70-80 (75.5-76 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.24	4.24	4.24
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	602.35		
Bulk Density, lb/ft^3	174		
Length to Diameter Ratio:	2.1	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

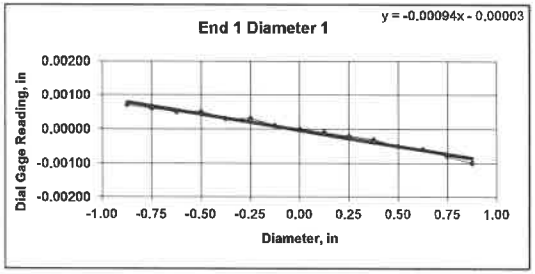
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00070	0.00060	0.00050	0.00050	0.00030	0.00030	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00050	-0.00060	-0.00080	-0.00100
Diameter 2, in (rotated 90°)	-0.00060	-0.00050	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00020	0.00020	0.00030	0.00030	0.00030

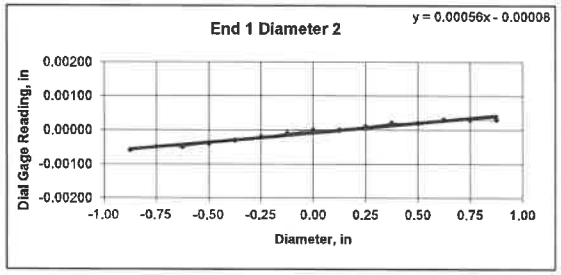
Difference between max and min readings, in: 0° = 0.00170 90° = 0.00090

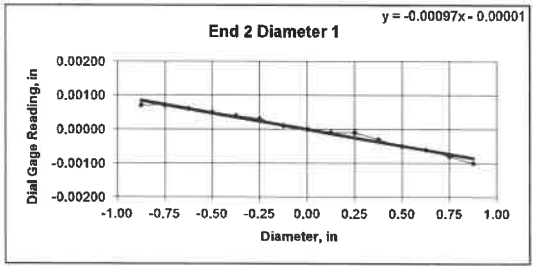
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00070	0.00070	0.00060	0.00050	0.00040	0.00030	0.00010	0.00000	-0.00010	-0.00010	-0.00030	-0.00050	-0.00060	-0.00080	-0.00100
Diameter 2, in (rotated 90°)	-0.00070	-0.00050	-0.00040	-0.00040	-0.00030	-0.00020	-0.00020	0.00000	0.00000	0.00000	0.00010	0.00020	0.00020	0.00030	0.00030

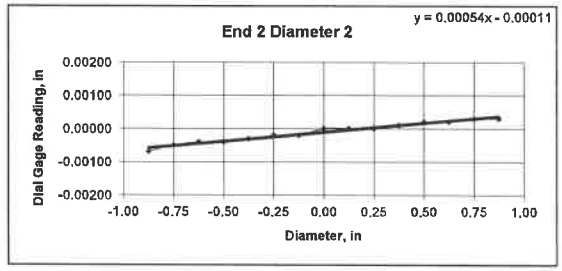
Difference between max and min readings, in: 0° = 0.0017 90° = 0.001

Maximum difference must be < 0.0020 in. Difference = ± 0.00085
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00094
Angle of Best Fit Line: -0.05386

End 2:
Slope of Best Fit Line: -0.00097
Angle of Best Fit Line: -0.05558

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: 0.00056
Angle of Best Fit Line: 0.03209

End 2:
Slope of Best Fit Line: 0.00054
Angle of Best Fit Line: 0.03094

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

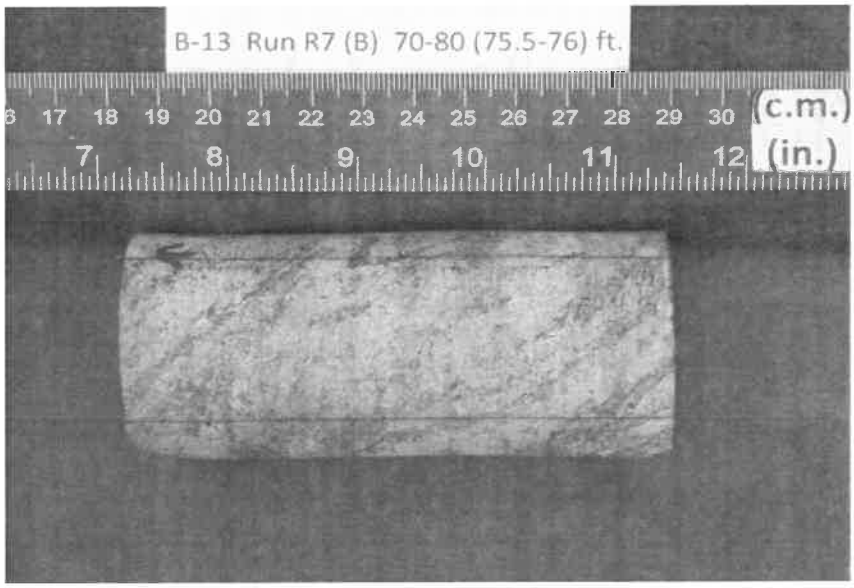
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00170	1.990	0.00085	0.049	YES
Diameter 2, in (rotated 90°)	0.00090	1.990	0.00045	0.026	YES
END 2					
Diameter 1, in	0.00170	1.990	0.00085	0.049	YES
Diameter 2, in (rotated 90°)	0.00100	1.990	0.00050	0.029	YES

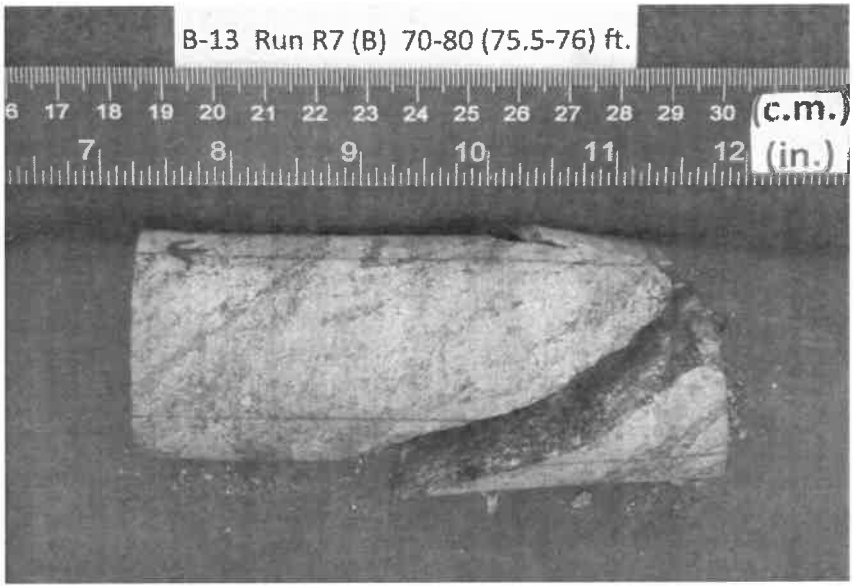
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	7/23/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-13
Sample ID:	Run R7 (B)
Depth, ft:	70-80 (75.5-76)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	9/4/2012
Tested By:	daa
Checked By:	mpd

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-1	Run R1	20-30 (22)	168	1,045	2	NO *

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.
All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.
Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)
* The as-received core did not meet the ASTM side straightness tolerance.

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	9/4/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-1	File Name:	
Sample ID:	Run R1	Test Date:	
Depth:	20-30 (22) ft	Peak Load (lbs.):	
Visual Description:	See photographs	Peak Stress (psi):	

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	3.98	3.98	3.98
Specimen Diameter, in:	1.97	1.98	1.98
Specimen Mass, g:	537.69		
Bulk Density, lb/ft³	168		
Length to Diameter Ratio:	2.0	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

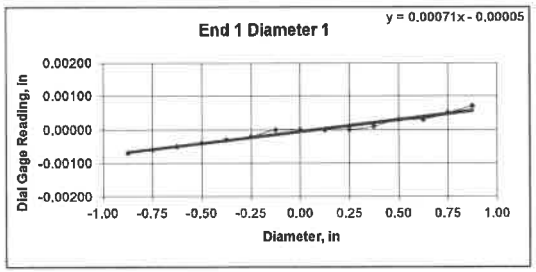
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00070	-0.00060	-0.00050	-0.00040	-0.00030	-0.00020	0.00000	0.00000	0.00000	0.00000	0.00010	0.00030	0.00030	0.00050	0.00070
Diameter 2, in (rotated 90°)	0.00110	0.00110	0.00070	0.00070	0.00030	0.00030	0.00010	0.00000	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	-0.00020	-0.00020

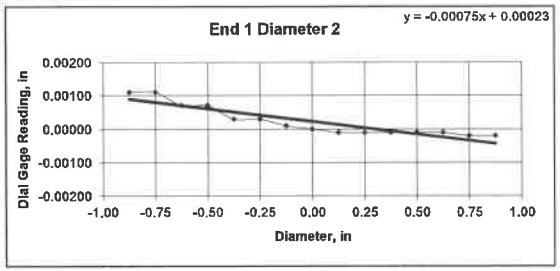
Difference between max and min readings, in:
0° = 0.00140 90° = 0.00130

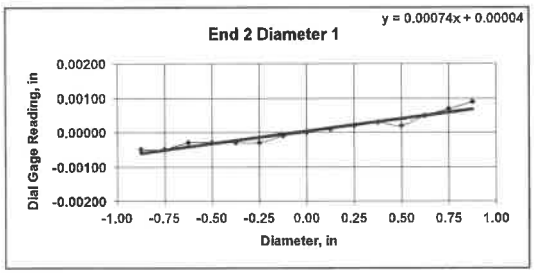
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00050	-0.00050	-0.00030	-0.00030	-0.00030	-0.00030	-0.00010	0.00000	0.00010	0.00020	0.00030	0.00020	0.00050	0.00070	0.00090
Diameter 2, in (rotated 90°)	0.00080	0.00070	0.00060	0.00040	0.00040	0.00020	0.00010	0.00000	0.00000	-0.00030	-0.00070	-0.00060	-0.00040	-0.00040	-0.00040

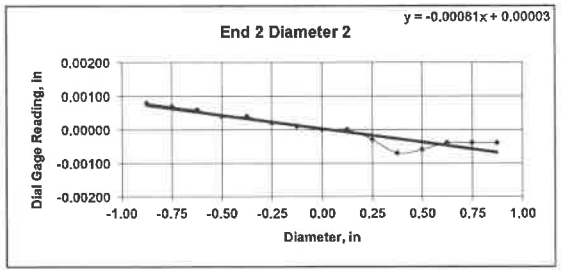
Difference between max and min readings, in:
0° = 0.0014 90° = 0.0015

Maximum difference must be < 0.0020 in. Difference = ± 0.00075
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00071
Angle of Best Fit Line: 0.04068

End 2:
Slope of Best Fit Line 0.00074
Angle of Best Fit Line: 0.04240

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00075
Angle of Best Fit Line: -0.04297

End 2:
Slope of Best Fit Line -0.00081
Angle of Best Fit Line: -0.04641

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

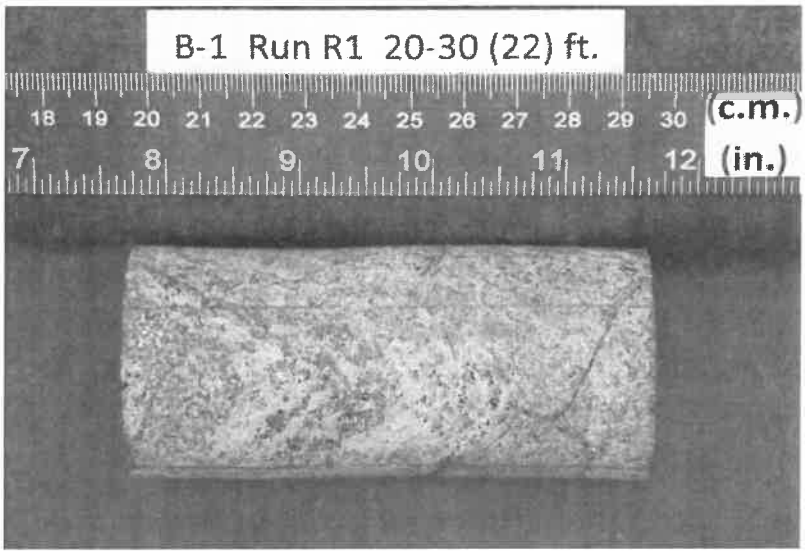
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00140	1.975	0.00071	0.041	YES
Diameter 2, in (rotated 90°)	0.00130	1.975	0.00066	0.038	YES
END 2					
Diameter 1, in	0.00140	1.975	0.00071	0.041	YES
Diameter 2, in (rotated 90°)	0.00150	1.975	0.00076	0.044	YES

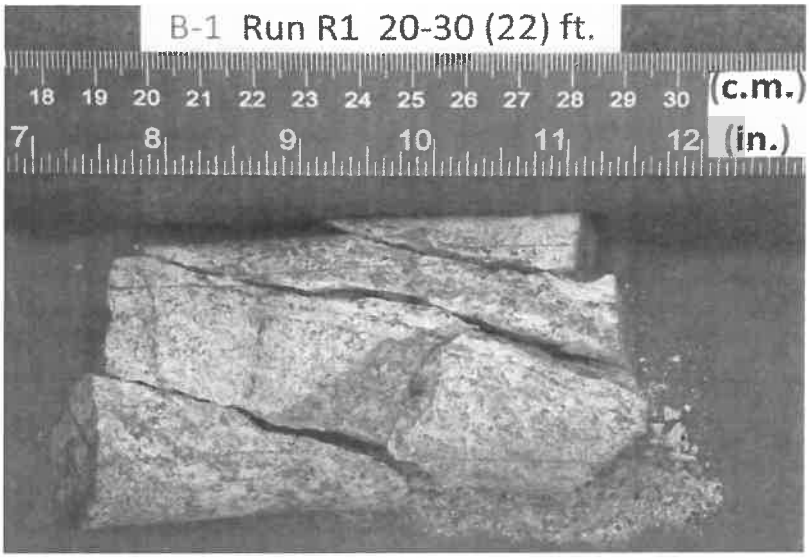
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	9/4/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-1
Sample ID:	Run R1
Depth, ft:	20-30 (22)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-2	Run R4	45-55 (51)	159	1,192	2	YES
B-2	Run R5	55-65 (61)	170	3,895	2	YES

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.

All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.

Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/31/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-2		
Sample ID:	Run R4		
Depth:	45-55 (51) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.04	4.04	4.04
Specimen Diameter, in:	1.98	1.99	1.99
Specimen Mass, g:	521.92		
Bulk Density, lb/ft³	159		
Length to Diameter Ratio:	2.0	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00050	0.00050	0.00030	0.00010	0.00010	0.00010	0.00010	0.00000	-0.00010	-0.00030	-0.00050	-0.00050	-0.00060	-0.00050	-0.00050
Diameter 2, in (rotated 90°)	-0.00090	-0.00080	-0.00070	-0.00060	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00020	0.00020	0.00020	0.00020	0.00010

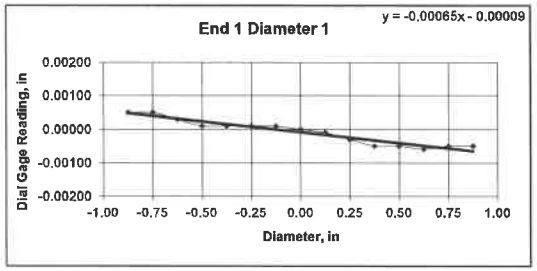
Difference between max and min readings, in: 0° = 0.00110 90° = 0.00110

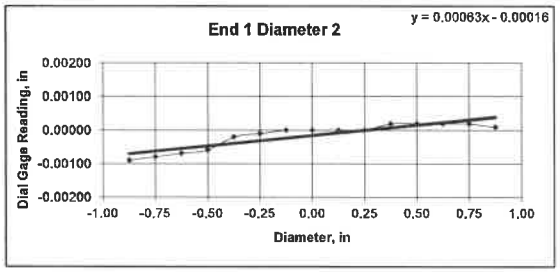
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00050	0.00050	0.00050	0.00050	0.00030	0.00030	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00030	-0.00040	-0.00040	-0.00040
Diameter 2, in (rotated 90°)	-0.00050	-0.00040	-0.00040	-0.00040	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00020	0.00030	0.00040	0.00050	0.00060	0.00060

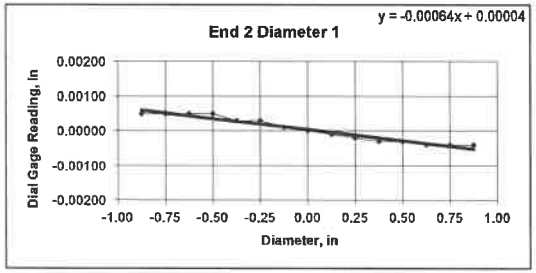
Difference between max and min readings, in: 0° = 0.0009 90° = 0.0011

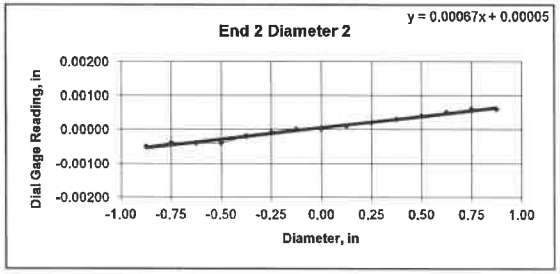
Maximum difference must be < 0.0020 in. Difference = ± 0.00055

Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00065
Angle of Best Fit Line: -0.03724

End 2:
Slope of Best Fit Line: -0.00064
Angle of Best Fit Line: -0.03667

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: 0.00063
Angle of Best Fit Line: 0.03610

End 2:
Slope of Best Fit Line: 0.00067
Angle of Best Fit Line: 0.03839

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

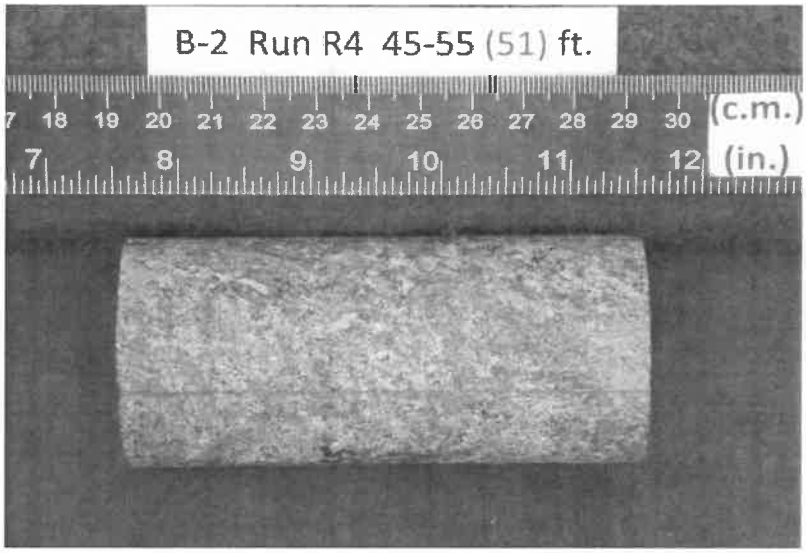
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00110	1.985	0.00055	0.032	YES
Diameter 2, in (rotated 90°)	0.00110	1.985	0.00055	0.032	YES
END 2					
Diameter 1, in	0.00090	1.985	0.00045	0.026	YES
Diameter 2, in (rotated 90°)	0.00110	1.985	0.00055	0.032	YES

Maximum angle of departure must be ≤ 0.25°

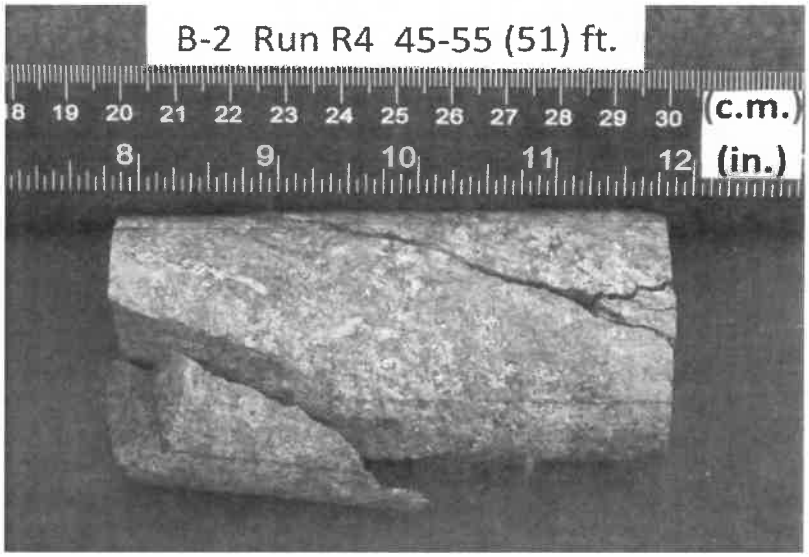
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-2
Sample ID:	Run R4
Depth, ft:	45-55 (51)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/31/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-2		
Sample ID:	Run R5		
Depth:	55-65 (61) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.37	4.37	4.37
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	602.41		
Bulk Density, lb/ft³	170		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

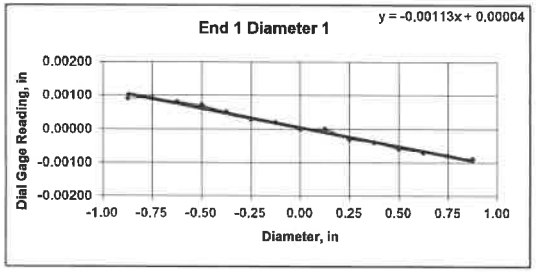
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00090	0.00090	0.00080	0.00070	0.00050	0.00030	0.00020	0.00000	0.00000	-0.00030	-0.00040	-0.00060	-0.00070	-0.00080	-0.00090
Diameter 2, in (rotated 90°)	-0.00070	-0.00070	-0.00060	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00010	0.00020	0.00030	0.00040	0.00050	0.00070	0.00070

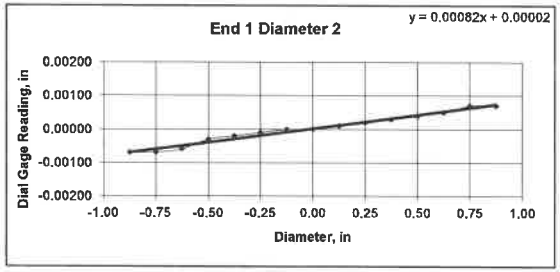
Difference between max and min readings, in: 0° = 0.00180 90° = 0.00140

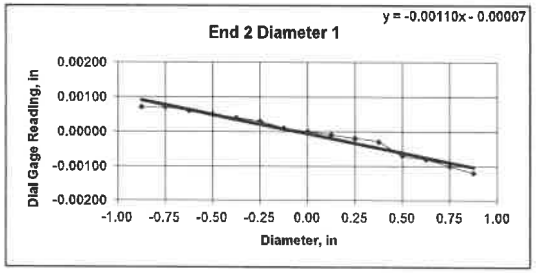
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00070	0.00070	0.00060	0.00050	0.00040	0.00030	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00070	-0.00080	-0.00100	-0.00120
Diameter 2, in (rotated 90°)	-0.00090	-0.00090	-0.00080	-0.00060	-0.00040	-0.00020	-0.00020	0.00000	0.00000	0.00010	0.00020	0.00030	0.00030	0.00030	0.00040

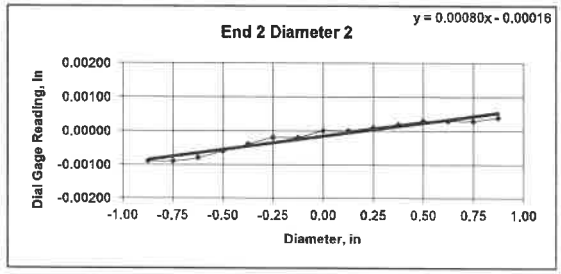
Difference between max and min readings, in: 0° = 0.0019 90° = 0.0013

Maximum difference must be < 0.0020 in. Difference = ± 0.00095
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00113
Angle of Best Fit Line: -0.06474

End 2:
Slope of Best Fit Line -0.00110
Angle of Best Fit Line: -0.06303

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00082
Angle of Best Fit Line: 0.04698

End 2:
Slope of Best Fit Line 0.00080
Angle of Best Fit Line: 0.04584

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

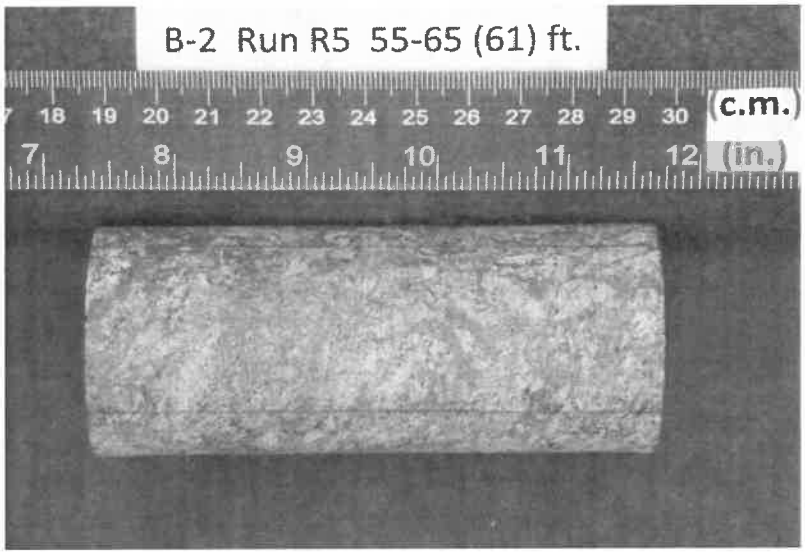
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00180	1.980	0.00091	0.052	YES
Diameter 2, in (rotated 90°)	0.00140	1.980	0.00071	0.041	YES
END 2					
Diameter 1, in	0.00190	1.980	0.00096	0.055	YES
Diameter 2, in (rotated 90°)	0.00130	1.980	0.00066	0.038	YES

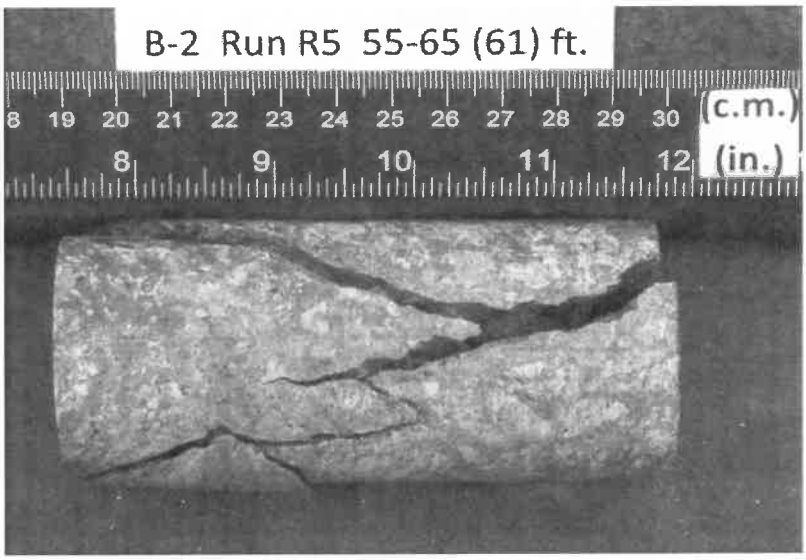
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-2
Sample ID:	Run R5
Depth, ft:	55-65 (61)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-3	Run R10 (A)	90-100 (91)	177	14,747	1	YES
B-3	Run R10 (B)	90-100 (99)	178	7,197	2	YES
B-3	Run R11	100-110 (105)	172	7,559	2	YES

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.

All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.

Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/31/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-3		
Sample ID:	Run R10 (A)		
Depth:	90-100 (91) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.23	4.23	4.23
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	614.2		
Bulk Density, lb/ft³	177		
Length to Diameter Ratio:	2.1	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

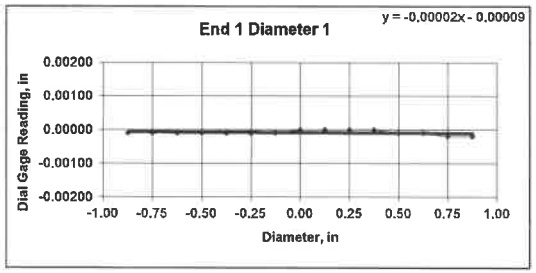
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00020	-0.00020
Diameter 2, in (rotated 90°)	-0.00060	-0.00040	-0.00030	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00030	-0.00040	-0.00070	-0.00090

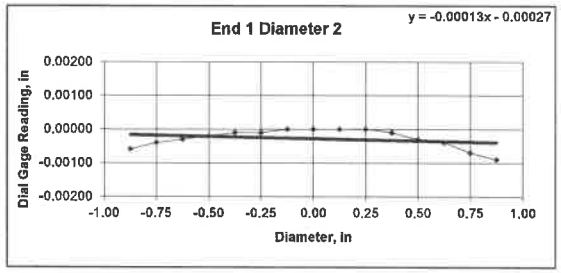
Difference between max and min readings, in: 0° = 0.00020 90° = 0.00090

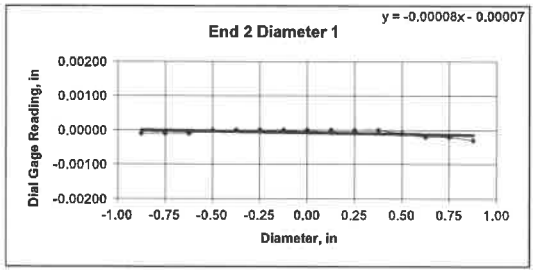
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020	-0.00030
Diameter 2, in (rotated 90°)	-0.00050	-0.00030	-0.00020	-0.00010	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	-0.00020	-0.00020	-0.00040	-0.00050	-0.00070

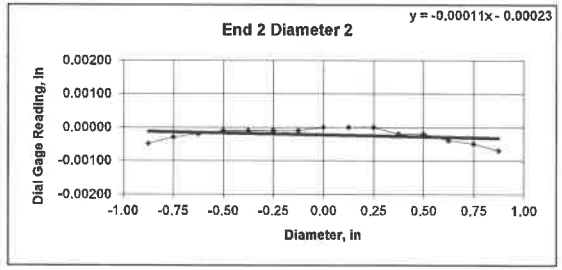
Difference between max and min readings, in: 0° = 0.0003 90° = 0.0007

Maximum difference must be < 0.0020 in. Difference = ± 0.00045
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00002
Angle of Best Fit Line: -0.00115

End 2:
Slope of Best Fit Line -0.00008
Angle of Best Fit Line: -0.00458

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00013
Angle of Best Fit Line: -0.00745

End 2:
Slope of Best Fit Line -0.00011
Angle of Best Fit Line: -0.00630

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

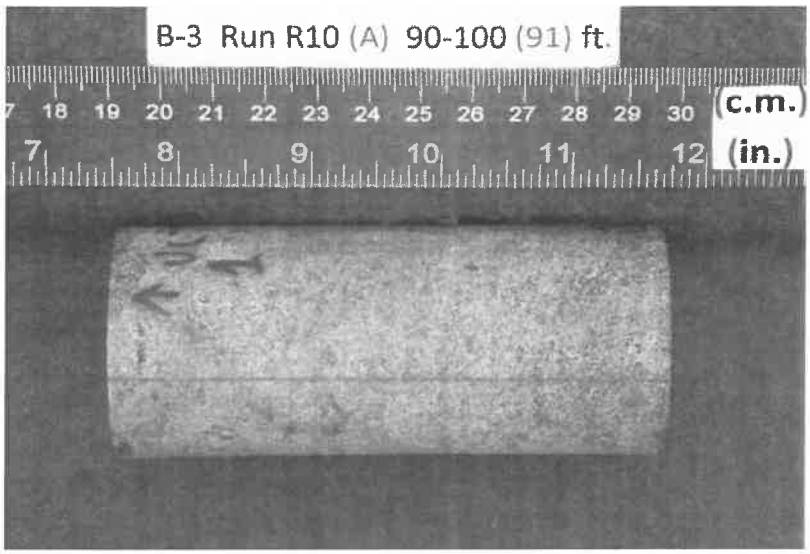
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00020	1.990	0.00010	0.006	YES
Diameter 2, in (rotated 90°)	0.00090	1.990	0.00045	0.026	YES
END 2					
Diameter 1, in	0.00030	1.990	0.00015	0.009	YES
Diameter 2, in (rotated 90°)	0.00070	1.990	0.00035	0.020	YES

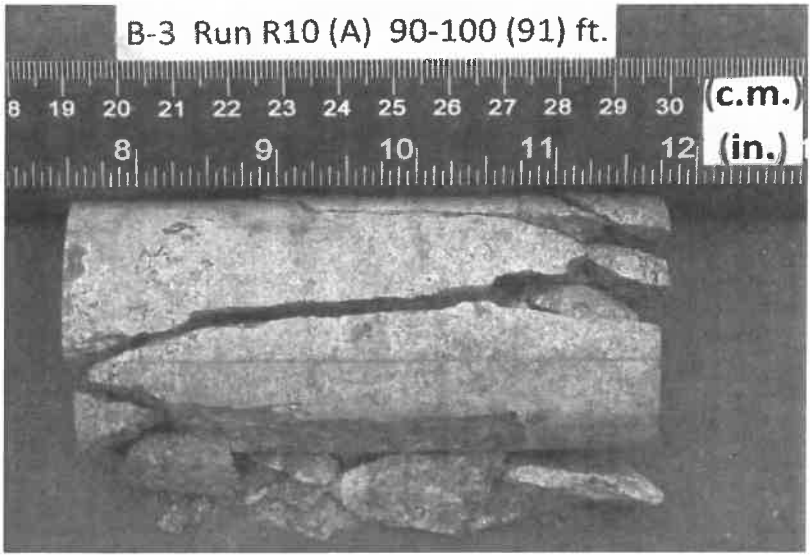
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-3
Sample ID:	Run R10 (A)
Depth, ft:	90-100 (91)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/31/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-3		
Sample ID:	Run R10 (B)		
Depth:	90-100 (99) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.22	4.22	4.22
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	613.38		
Bulk Density, lb/ft³	178		
Length to Diameter Ratio:	2.1	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00090	-0.00080	-0.00070	-0.00050	-0.00040	-0.00030	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010
Diameter 2, in (rotated 90°)	-0.00050	-0.00050	-0.00030	-0.00020	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

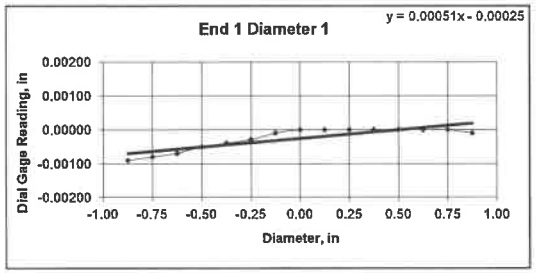
Difference between max and min readings, in: 0° = 0.00090 90° = 0.00050

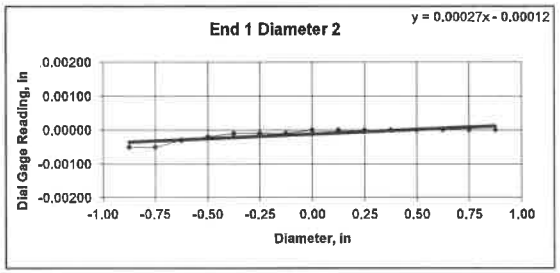
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00100	-0.00080	-0.00070	-0.00060	-0.00040	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00010
Diameter 2, in (rotated 90°)	-0.00040	-0.00040	-0.00040	-0.00030	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010

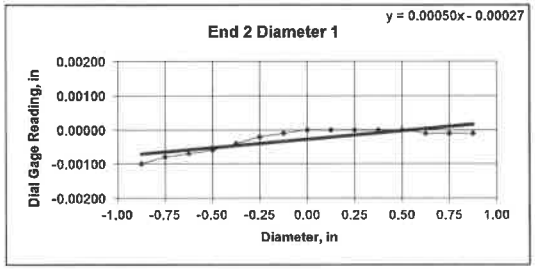
Difference between max and min readings, in: 0° = 0.001 90° = 0.0004

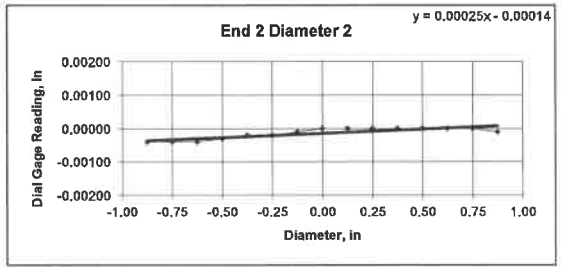
Maximum difference must be < 0.0020 in. Difference = ± 0.00050

Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00051
Angle of Best Fit Line: 0.02922

End 2:
Slope of Best Fit Line 0.00050
Angle of Best Fit Line: 0.02865

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00027
Angle of Best Fit Line: 0.01547

End 2:
Slope of Best Fit Line 0.00025
Angle of Best Fit Line: 0.01432

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

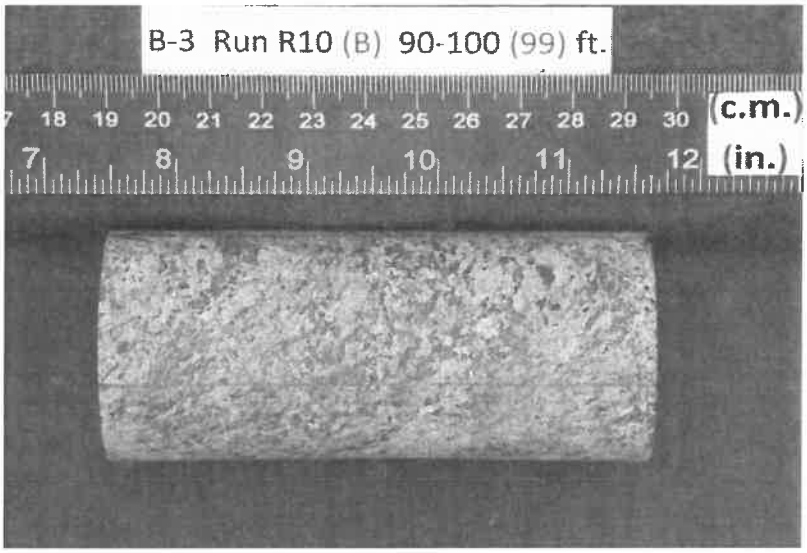
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00090	1.990	0.00045	0.026	YES
Diameter 2, in (rotated 90°)	0.00050	1.990	0.00025	0.014	YES
END 2					
Diameter 1, in	0.00100	1.990	0.00050	0.029	YES
Diameter 2, in (rotated 90°)	0.00040	1.990	0.00020	0.012	YES

Maximum angle of departure must be ≤ 0.25°

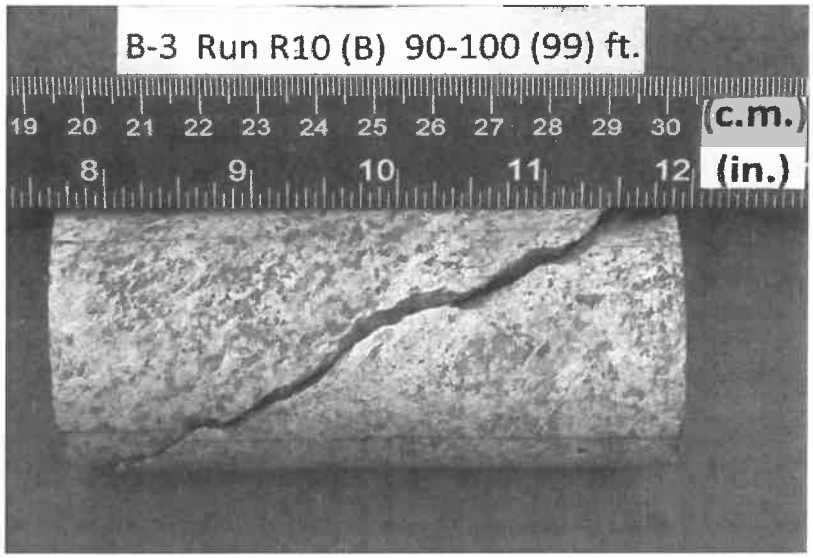
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-3
Sample ID:	Run R10 (B)
Depth, ft:	90-100 (99)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/31/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-3		
Sample ID:	Run R11		
Depth:	100-110 (105) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.33	4.33	4.33
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	607.91		
Bulk Density, lb/ft³	172		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

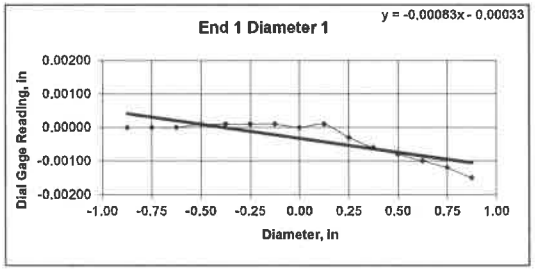
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010	0.00000	0.00010	-0.00030	-0.00060	-0.00080	-0.00100	-0.00120	-0.00150
Diameter 2, in (rotated 90°)	-0.00030	-0.00030	-0.00030	-0.00020	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010

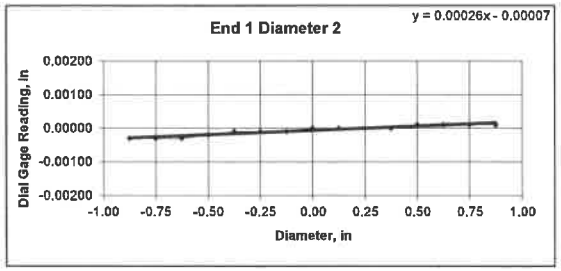
Difference between max and min readings, in:
0° = 0.00160 90° = 0.00040

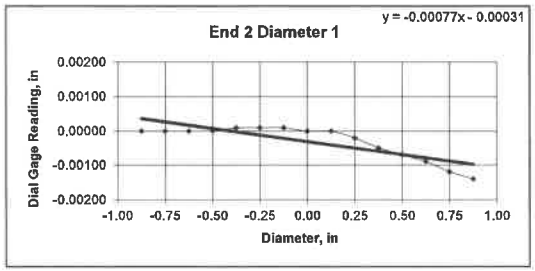
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00000	0.00000	-0.00020	-0.00050	-0.00070	-0.00090	-0.00120	-0.00140
Diameter 2, in (rotated 90°)	-0.00040	-0.00040	-0.00030	-0.00020	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

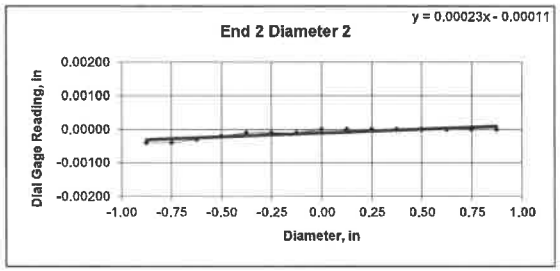
Difference between max and min readings, in:
0° = 0.0015 90° = 0.0004

Maximum difference must be < 0.0020 in. Difference = ± 0.00080
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00083
Angle of Best Fit Line: -0.04756

End 2:
Slope of Best Fit Line -0.00077
Angle of Best Fit Line: -0.04412

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00026
Angle of Best Fit Line: 0.01490

End 2:
Slope of Best Fit Line 0.00023
Angle of Best Fit Line: 0.01318

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

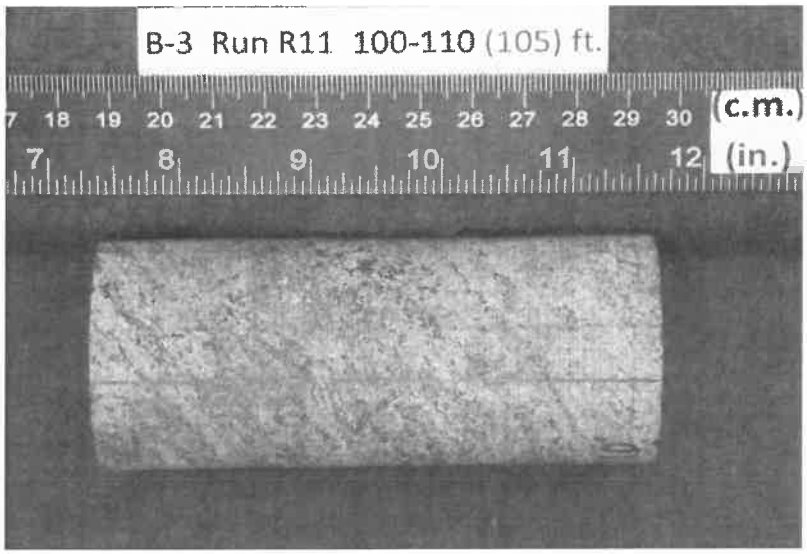
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00160	1.990	0.00080	0.046	YES
Diameter 2, in (rotated 90°)	0.00040	1.990	0.00020	0.012	YES
END 2					
Diameter 1, in	0.00150	1.990	0.00075	0.043	YES
Diameter 2, in (rotated 90°)	0.00040	1.990	0.00020	0.012	YES

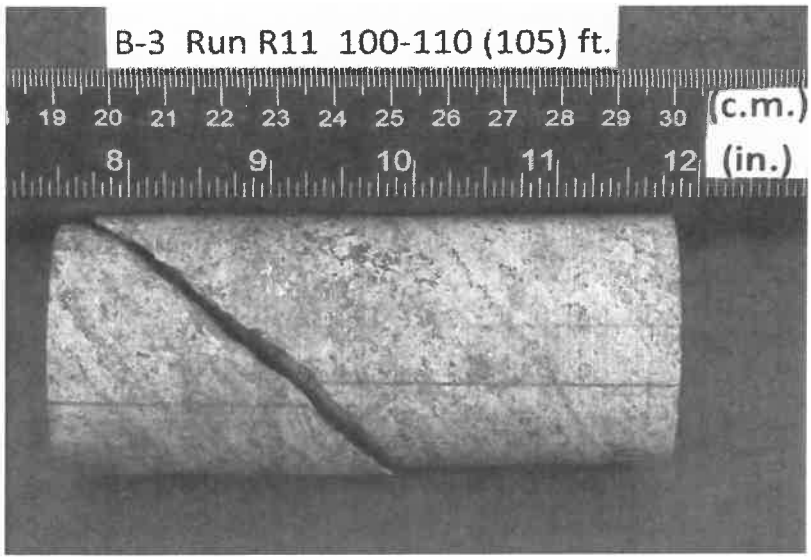
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-3
Sample ID:	Run R11
Depth, ft:	100-110 (105)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D 7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D 4543
B-5	Run R9 (A)	90-100 (92)	177	18,228	1&2	YES
B-5	Run R9 (B)	90-100 (98)	172	8,213	2	NO *
B-5	Run R10 (A)	100-110 (101)	173	14,426	1	YES
B-5	Run R10 (B)	100-110 (109)	176	6,922	2	NO *
B-5	Run R16	160-170 (164)	170	11,519	1	YES
B-5	Run R17	170-175 (174)	173	2,809	2	NO *

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.

All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.

Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)

* The as-received core did not meet the ASTM side straightness tolerance.

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/31/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-5		
Sample ID:	Run R9 (A)		
Depth:	90-100 (92) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.29	4.29	4.29
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	620.38		
Bulk Density, lb/ft³	177		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

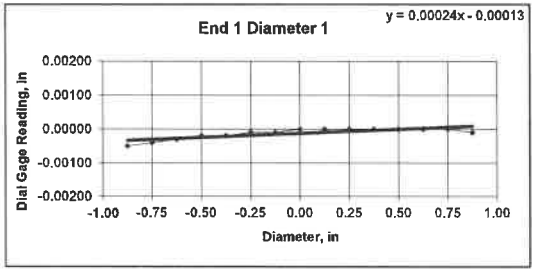
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00050	-0.00040	-0.00030	-0.00020	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00010	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00040	-0.00060	-0.00080	-0.00100	-0.00120

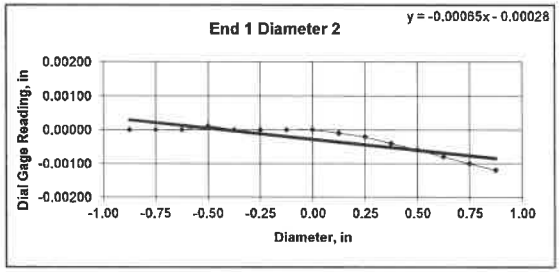
Difference between max and min readings, in: 0° = 0.00050 90° = 0.00130

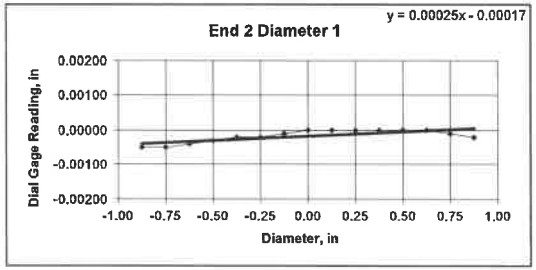
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00050	-0.00050	-0.00040	-0.00030	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00020	-0.00040	-0.00060	-0.00080	-0.00090	-0.00110

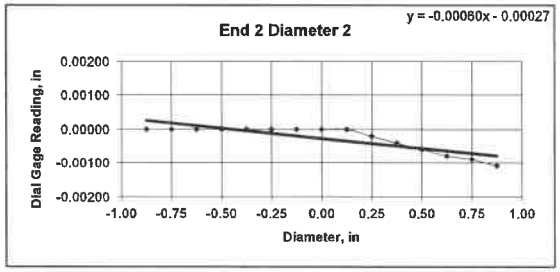
Difference between max and min readings, in: 0° = 0.0005 90° = 0.0011

Maximum difference must be < 0.0020 in. Difference = ± 0.00065
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00024
Angle of Best Fit Line: 0.01375

End 2:
Slope of Best Fit Line 0.00025
Angle of Best Fit Line: 0.01432

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line -0.00065
Angle of Best Fit Line: -0.03724

End 2:
Slope of Best Fit Line -0.00060
Angle of Best Fit Line: -0.03438

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? **YES**
Spherically Seated

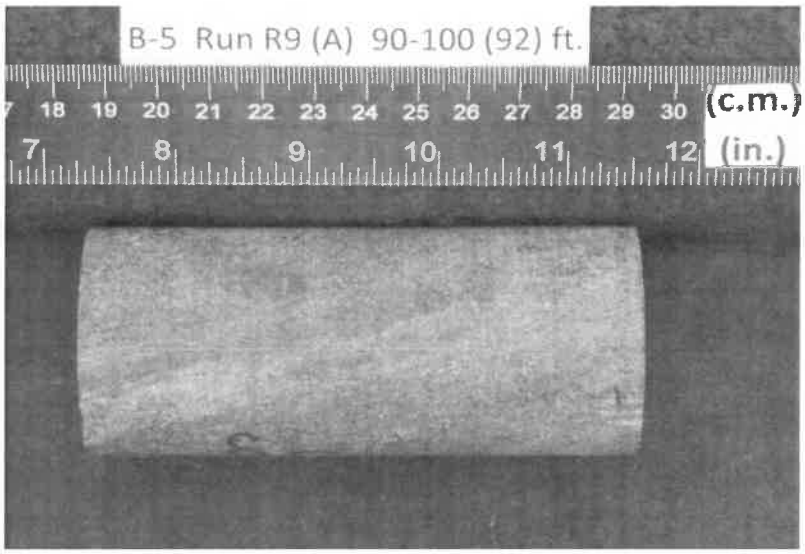
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00050	1.990	0.00025	0.014	YES
Diameter 2, in (rotated 90°)	0.00130	1.990	0.00065	0.037	YES
END 2					
Diameter 1, in	0.00050	1.990	0.00025	0.014	YES
Diameter 2, in (rotated 90°)	0.00110	1.990	0.00055	0.032	YES

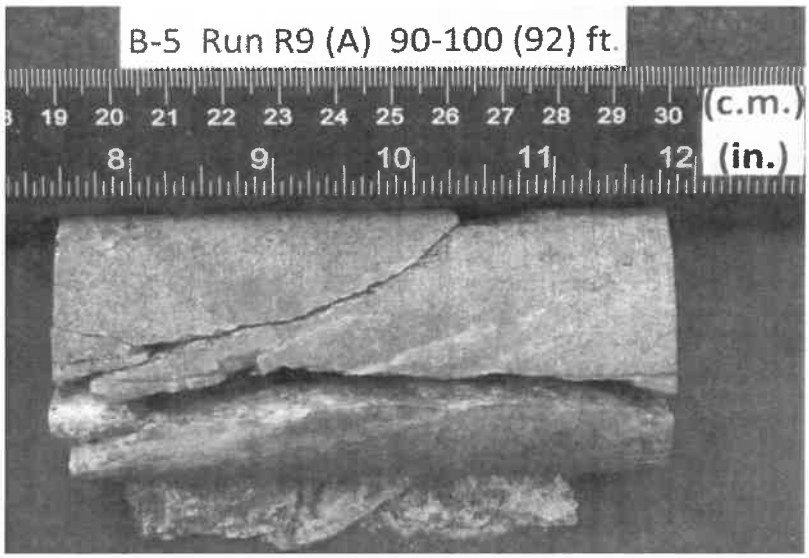
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-5
Sample ID:	Run R9 (A)
Depth, ft:	90-100 (92)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/31/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-5		
Sample ID:	Run R9 (B)		
Depth:	90-100 (98) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.27	4.27	4.27
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	600.22		
Bulk Density, lb/ft³	172		
Length to Diameter Ratio:	2.1	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

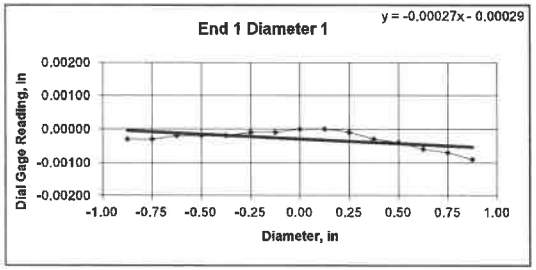
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00030	-0.00030	-0.00020	-0.00020	-0.00020	-0.00010	-0.00010	0.00000	0.00000	-0.00010	-0.00030	-0.00040	-0.00060	-0.00070	-0.00090
Diameter 2, in (rotated 90°)	-0.00030	-0.00020	-0.00020	-0.00020	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020

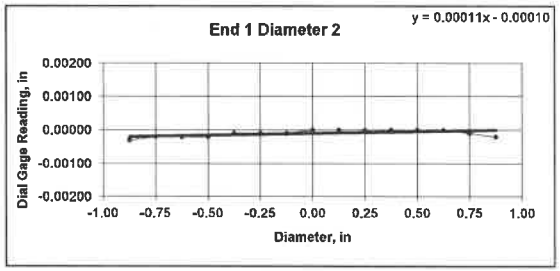
Difference between max and min readings, in: 0° = 0.00090 90° = 0.00030

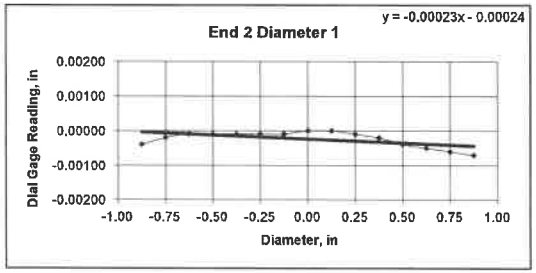
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00040	-0.00020	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	0.00000	0.00000	-0.00010	-0.00020	-0.00040	-0.00050	-0.00060	-0.00070
Diameter 2, in (rotated 90°)	-0.00030	-0.00030	-0.00020	-0.00020	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00030

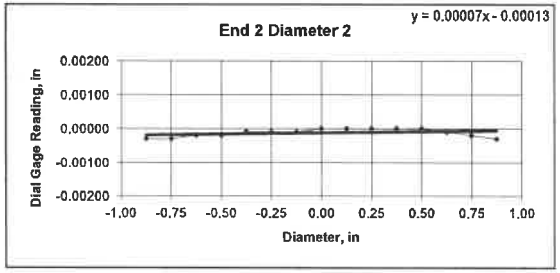
Difference between max and min readings, in: 0° = 0.0007 90° = 0.0003

Maximum difference must be < 0.0020 in. Difference = ± 0.00045
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00027
Angle of Best Fit Line: -0.01547

End 2:
Slope of Best Fit Line -0.00023
Angle of Best Fit Line: -0.01318

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00011
Angle of Best Fit Line: 0.00630

End 2:
Slope of Best Fit Line 0.00007
Angle of Best Fit Line: 0.00401

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

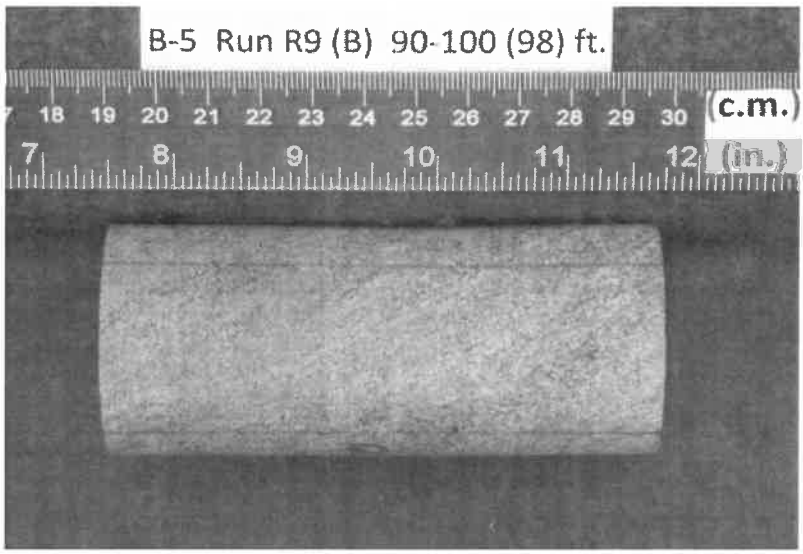
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00090	1.990	0.00045	0.026	YES
Diameter 2, in (rotated 90°)	0.00030	1.990	0.00015	0.009	YES
END 2					
Diameter 1, in	0.00070	1.990	0.00035	0.020	YES
Diameter 2, in (rotated 90°)	0.00030	1.990	0.00015	0.009	YES

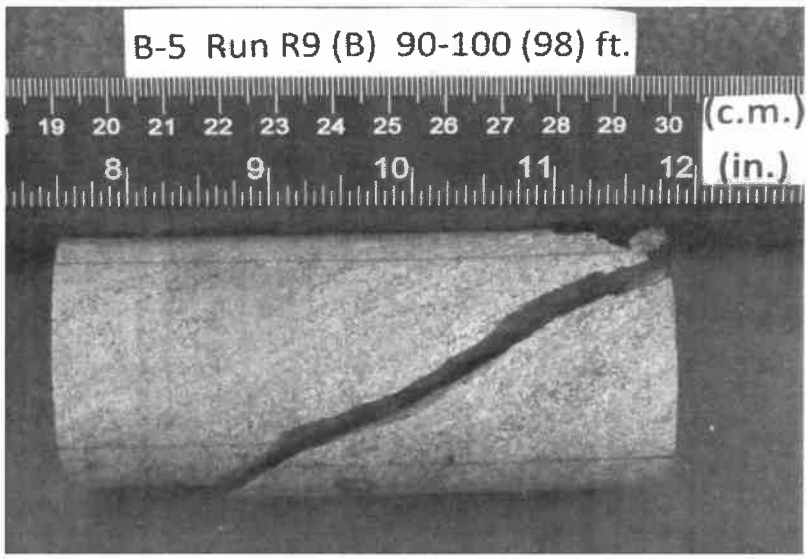
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-5
Sample ID:	Run R9 (B)
Depth, ft:	90-100 (98)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/31/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-5		
Sample ID:	Run R10 (A)		
Depth:	100-110 (101) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.32	4.32	4.32
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	611.96		
Bulk Density, lb/ft³	173		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

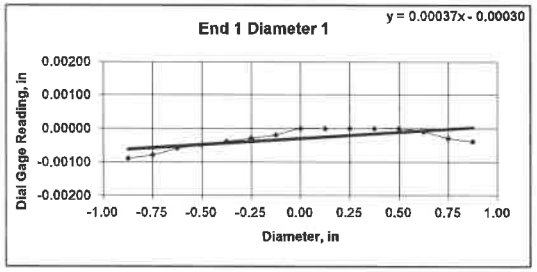
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00090	-0.00080	-0.00060	-0.00050	-0.00040	-0.00030	-0.00020	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00030	-0.00040
Diameter 2, in (rotated 90°)	-0.00070	-0.00070	-0.00060	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010

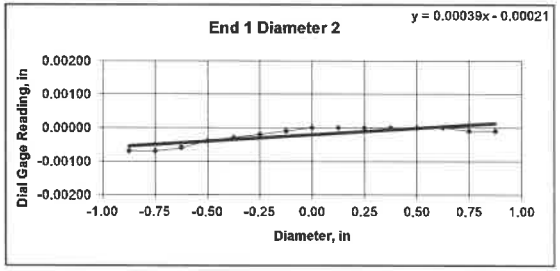
Difference between max and min readings, in: 0° = 0.00090 90° = 0.00070

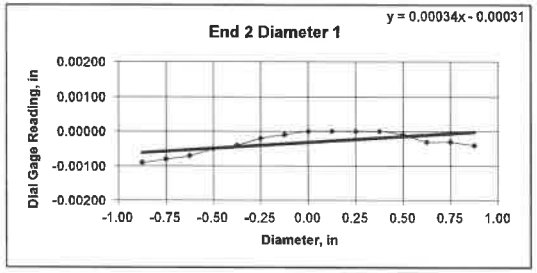
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00090	-0.00080	-0.00070	-0.00050	-0.00040	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00030	-0.00030	-0.00040
Diameter 2, in (rotated 90°)	-0.00070	-0.00060	-0.00050	-0.00040	-0.00030	-0.00030	-0.00020	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

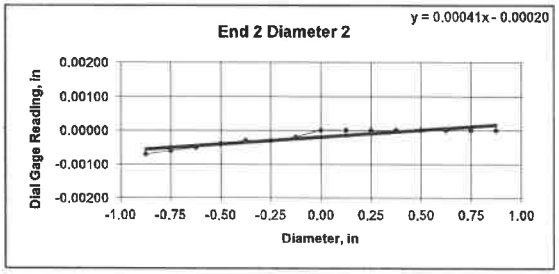
Difference between max and min readings, in: 0° = 0.0009 90° = 0.0007

Maximum difference must be < 0.0020 in. Difference = ± 0.00045
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00037
Angle of Best Fit Line: 0.02120

End 2:
Slope of Best Fit Line 0.00034
Angle of Best Fit Line: 0.01948

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00039
Angle of Best Fit Line: 0.02235

End 2:
Slope of Best Fit Line 0.00041
Angle of Best Fit Line: 0.02349

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? **YES**
Spherically Seated

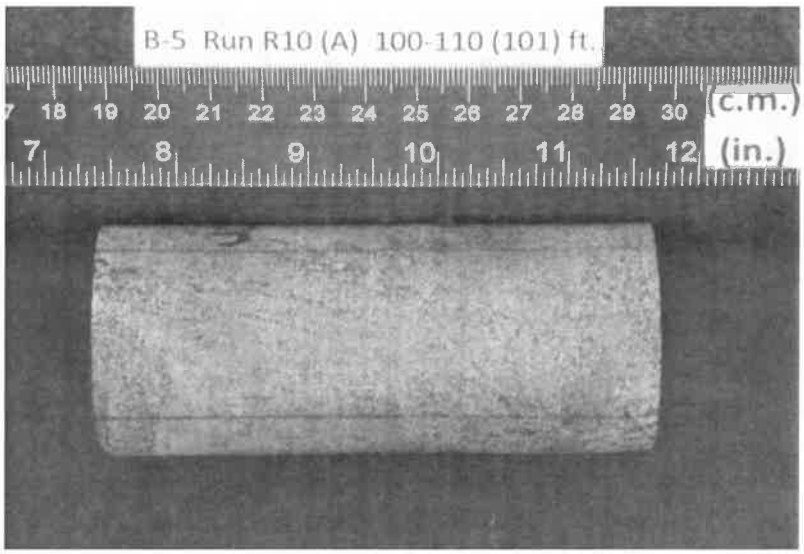
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00090	1.990	0.00045	0.026	YES
Diameter 2, in (rotated 90°)	0.00070	1.990	0.00035	0.020	YES
END 2					
Diameter 1, in	0.00090	1.990	0.00045	0.026	YES
Diameter 2, in (rotated 90°)	0.00070	1.990	0.00035	0.020	YES

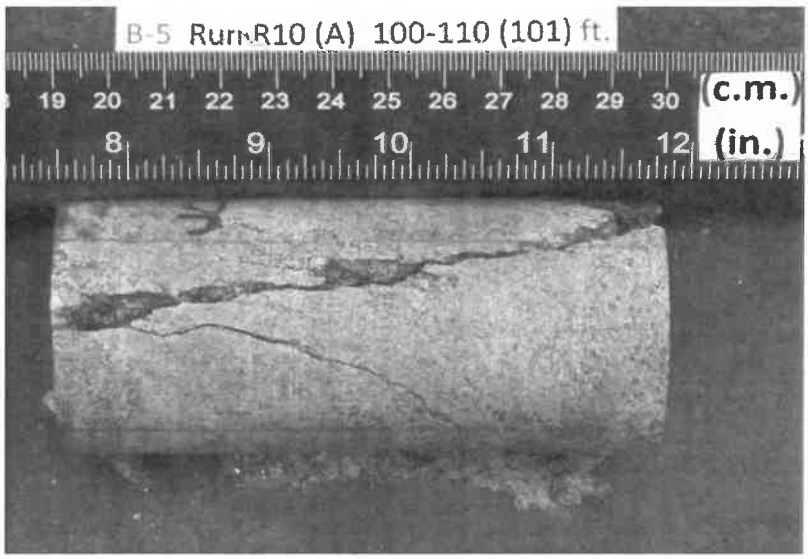
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-5
Sample ID:	Run R10 (A)
Depth, ft:	100-110 (101)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/31/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-5		
Sample ID:	Run R10 (B)		
Depth:	100-110 (109) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.30	4.30	4.30
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	618.73		
Bulk Density, lb/ft³	176		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

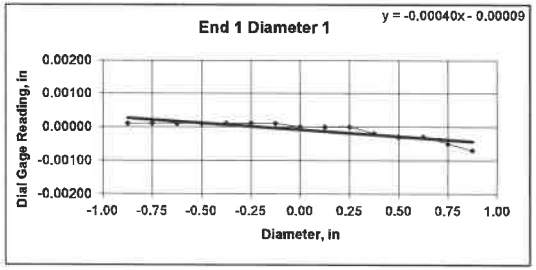
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	-0.00020	-0.00030	-0.00030	-0.00050	-0.00070
Diameter 2, in (rotated 90°)	-0.00060	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010

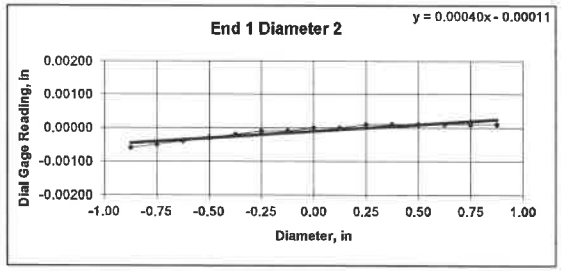
Difference between max and min readings, in: 0° = 0.00080 90° = 0.00070

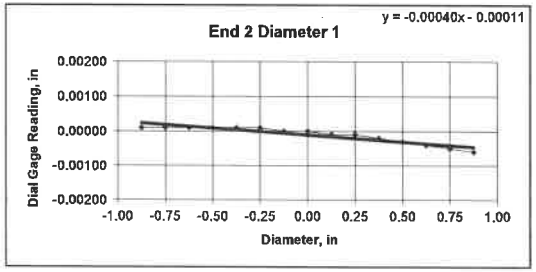
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	-0.00010	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00060
Diameter 2, in (rotated 90°)	-0.00050	-0.00040	-0.00030	-0.00020	-0.00010	-0.00010	-0.00010	0.00000	0.00010	0.00010	0.00010	0.00010	0.00010	0.00020	0.00020

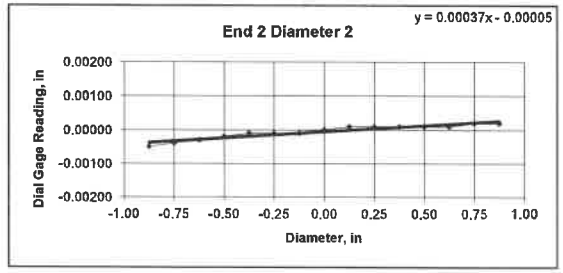
Difference between max and min readings, in: 0° = 0.0007 90° = 0.0007

Maximum difference must be < 0.0020 in. Difference = ± 0.00040
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00040
Angle of Best Fit Line: -0.02292

End 2:
Slope of Best Fit Line: -0.00040
Angle of Best Fit Line: -0.02292

Maximum Angular Difference: 0.00000

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: 0.00040
Angle of Best Fit Line: 0.02292

End 2:
Slope of Best Fit Line: 0.00037
Angle of Best Fit Line: 0.02120

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? **YES**
Spherically Seated

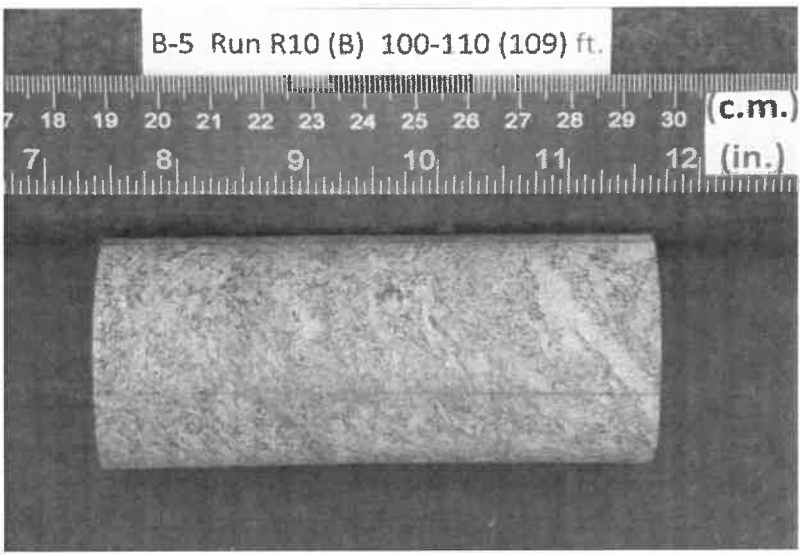
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00080	1.990	0.00040	0.023	YES
Diameter 2, in (rotated 90°)	0.00070	1.990	0.00035	0.020	YES
END 2					
Diameter 1, in	0.00070	1.990	0.00035	0.020	YES
Diameter 2, in (rotated 90°)	0.00070	1.990	0.00035	0.020	YES

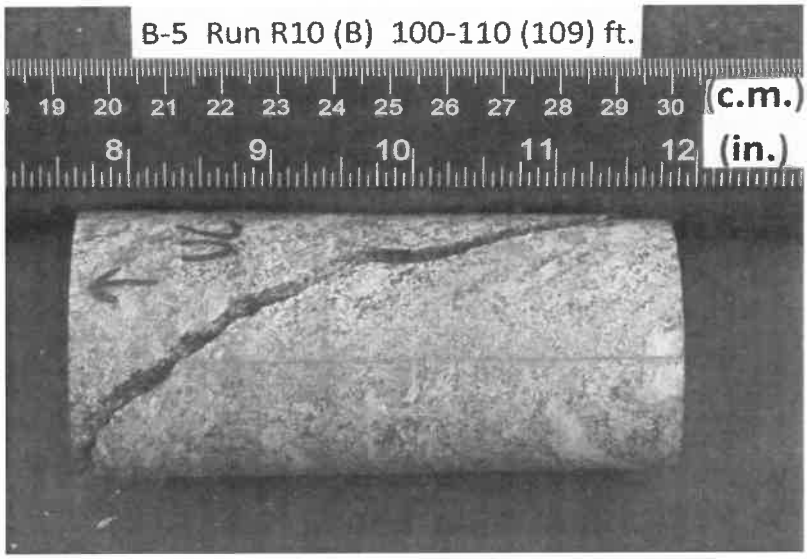
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-5
Sample ID:	Run R10 (B)
Depth, ft:	100-110 (109)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/31/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-5		
Sample ID:	Run R16		
Depth:	160-170 (164) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.45	4.45	4.45
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	620.16		
Bulk Density, lb/ft^3	170		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **YES**

END FLATNESS AND PARALLELISM (Procedure FP1)

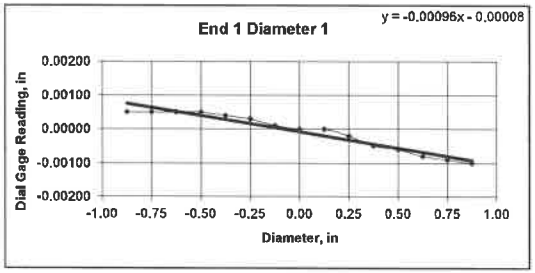
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00050	0.00050	0.00050	0.00050	0.00040	0.00030	0.00010	0.00000	0.00000	-0.00020	-0.00050	-0.00060	-0.00080	-0.00090	-0.00100
Diameter 2, in (rotated 90°)	-0.00060	-0.00060	-0.00040	-0.00040	-0.00030	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00010	0.00020	0.00030	0.00030

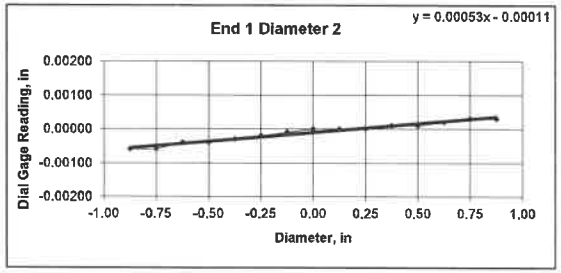
Difference between max and min readings, in: 0° = 0.00150 90° = 0.00090

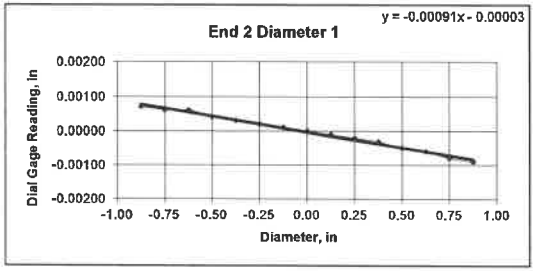
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00070	0.00060	0.00060	0.00040	0.00030	0.00020	0.00010	0.00000	-0.00010	-0.00020	-0.00030	-0.00050	-0.00060	-0.00080	-0.00090
Diameter 2, in (rotated 90°)	-0.00050	-0.00050	-0.00040	-0.00030	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00020	0.00030	0.00030	0.00030

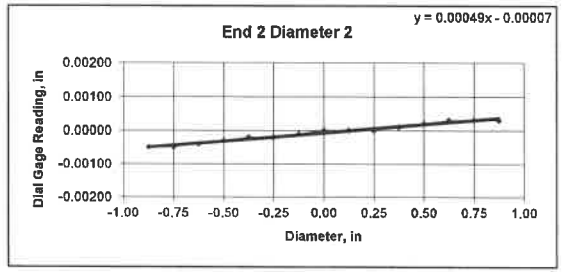
Difference between max and min readings, in: 0° = 0.0016 90° = 0.0008

Maximum difference must be < 0.0020 in. Difference = ± 0.00080
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line -0.00096
Angle of Best Fit Line: -0.05500

End 2:
Slope of Best Fit Line -0.00091
Angle of Best Fit Line: -0.05214

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00053
Angle of Best Fit Line: 0.03037

End 2:
Slope of Best Fit Line 0.00049
Angle of Best Fit Line: 0.02807

Maximum Angular Difference: 0.00229

Parallelism Tolerance Met? **YES**
Spherically Seated

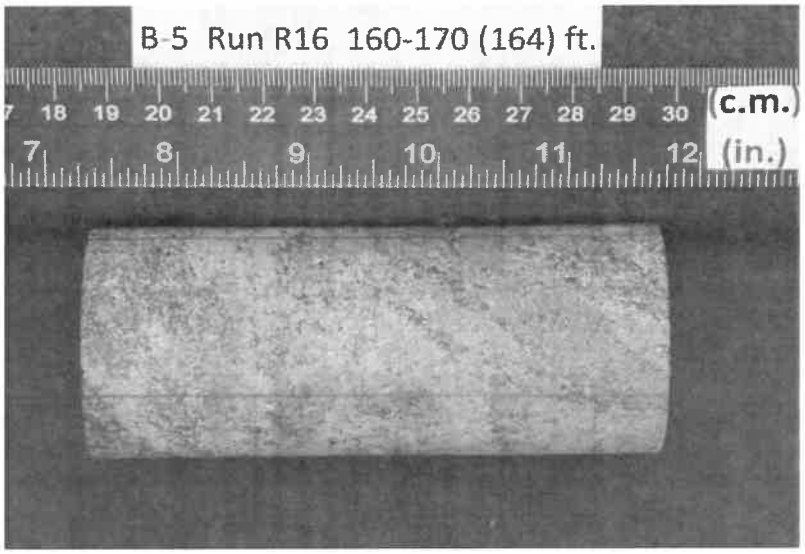
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00150	1.990	0.00075	0.043	YES
Diameter 2, in (rotated 90°)	0.00090	1.990	0.00045	0.026	YES
END 2					
Diameter 1, in	0.00160	1.990	0.00080	0.046	YES
Diameter 2, in (rotated 90°)	0.00080	1.990	0.00040	0.023	YES

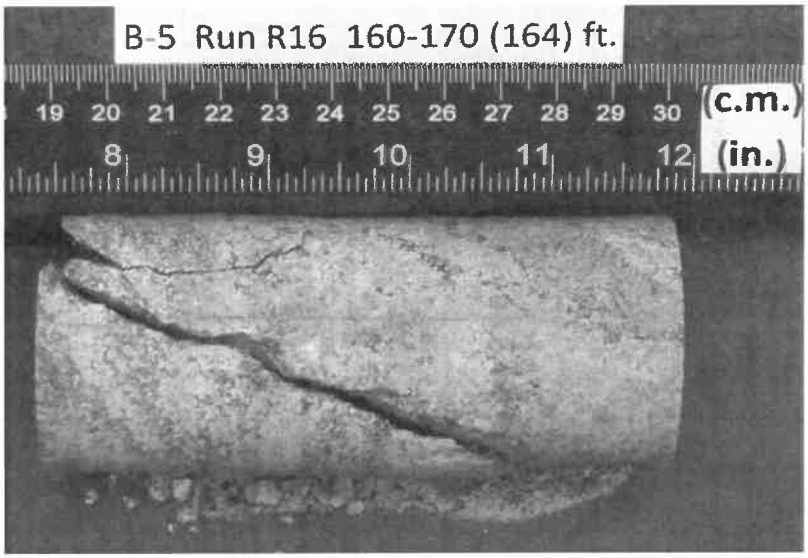
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-5
Sample ID:	Run R16
Depth, ft:	160-170 (164)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith	Test Date:	8/31/2012
Project Name:	New 20" Sub Aqueous Water Main	Tested By:	daa
Project Location:	Eastchester Bay Crossing, Bronx, NY	Checked By:	mpd
GTX #:	11987		
Boring ID:	B-5		
Sample ID:	Run R17		
Depth:	170-175 (174) ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D 4543-08

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.34	4.35	4.35
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	614.98		
Bulk Density, lb/ft³	173		
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	**YES**

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? **NO**

END FLATNESS AND PARALLELISM (Procedure FP1)

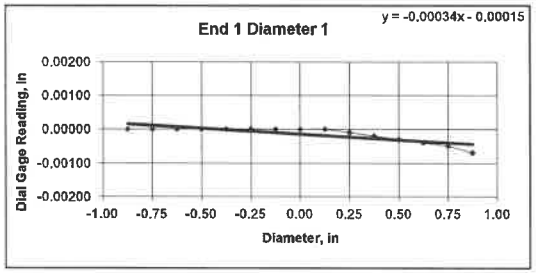
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00030	-0.00040	-0.00050	-0.00070
Diameter 2, in (rotated 90°)	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

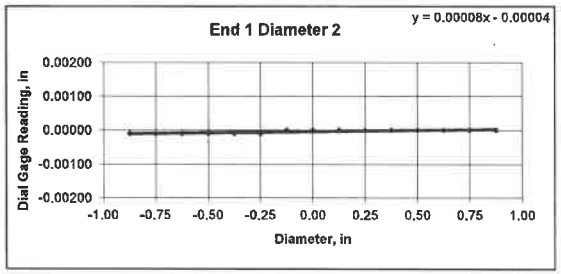
Difference between max and min readings, in: 0° = 0.00070 90° = 0.00010

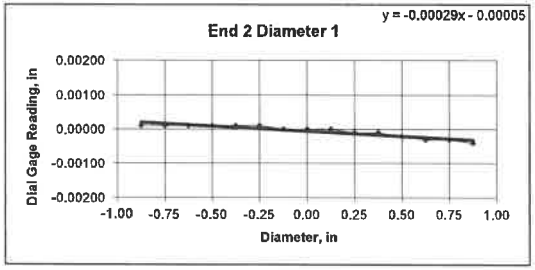
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00020	-0.00030	-0.00030	-0.00040
Diameter 2, in (rotated 90°)	-0.00020	-0.00020	-0.00020	-0.00020	-0.00010	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00020	-0.00020

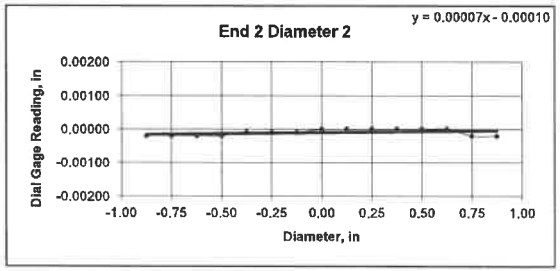
Difference between max and min readings, in: 0° = 0.0005 90° = 0.0002

Maximum difference must be < 0.0020 in. Difference = ± 0.00035
Flatness Tolerance Met? **YES**









DIAMETER 1

End 1:
Slope of Best Fit Line: -0.00034
Angle of Best Fit Line: -0.01948

End 2:
Slope of Best Fit Line: -0.00029
Angle of Best Fit Line: -0.01662

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? **YES**
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line: 0.00008
Angle of Best Fit Line: 0.00458

End 2:
Slope of Best Fit Line: 0.00007
Angle of Best Fit Line: 0.00401

Maximum Angular Difference: 0.00057

Parallelism Tolerance Met? **YES**
Spherically Seated

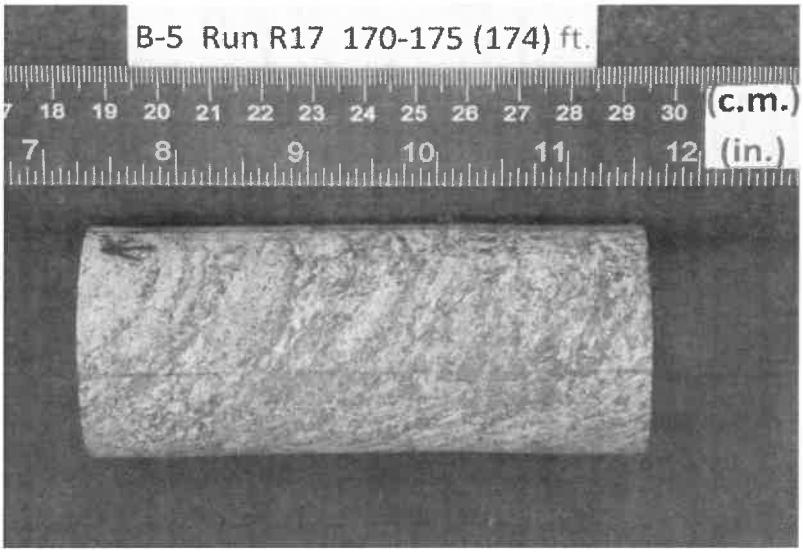
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00070	1.990	0.00035	0.020	YES
Diameter 2, in (rotated 90°)	0.00010	1.990	0.00005	0.003	YES
END 2					
Diameter 1, in	0.00050	1.990	0.00025	0.014	YES
Diameter 2, in (rotated 90°)	0.00020	1.990	0.00010	0.006	YES

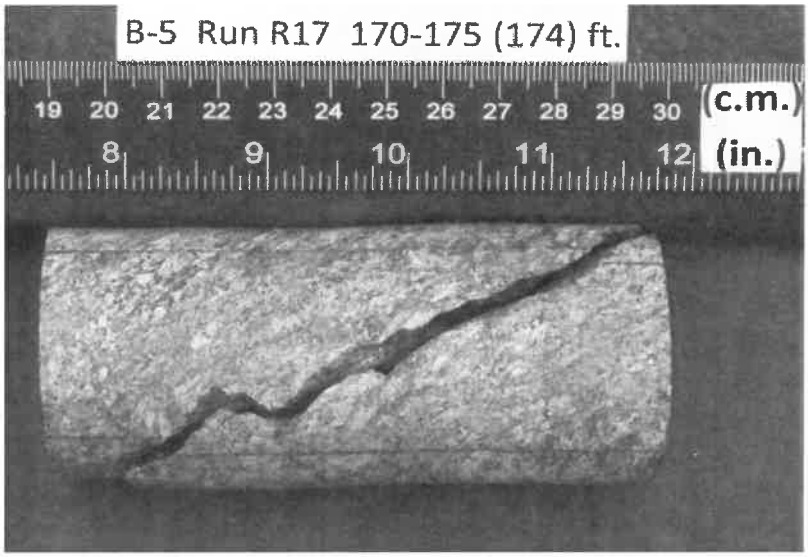
Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? **YES**

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	8/31/2012
Tested By:	daa
Checked By:	mpd
Boring ID:	B-5
Sample ID:	Run R17
Depth, ft:	170-175 (174)



After cutting and grinding



After break

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/30/12
Tested By:	bfm
Checked By:	mpd

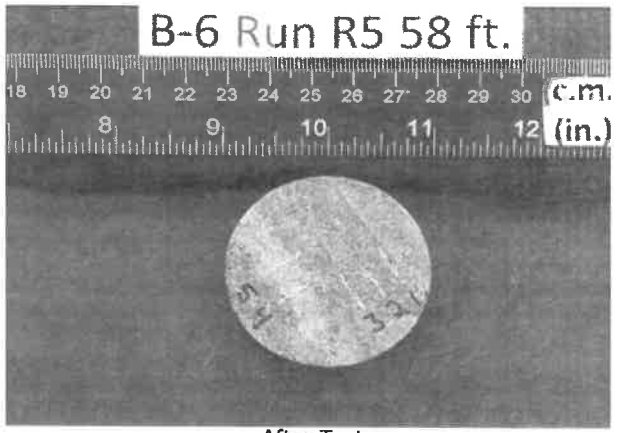
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-6	Run R5	55-65 (58)	1	2.0	4.1	3.1	
			2	2.6	3.3	3.0	
			3	1.9	4.3	3.1	
			4	3.7	4.9	4.3	
			5	3.5	4.6	4.1	
			Average CAIs			3.5	
			Average CAI *			3.9	
CERCHAR Abrasiveness Index Classification						High abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/08/12
Tested By:	daa
Checked By:	mpd

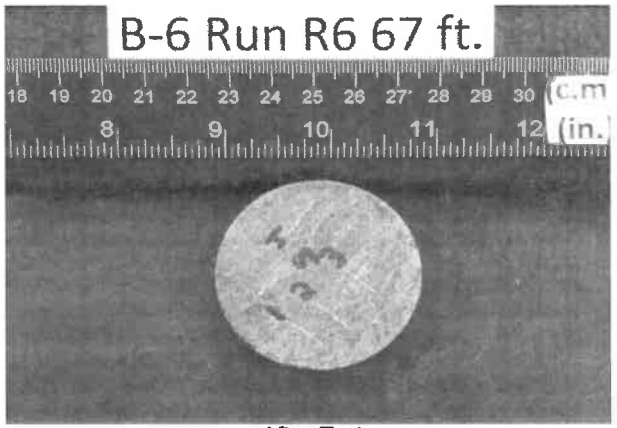
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-6	Run R6	65-75 (67)	1	5.2	4.6	4.9	
			2	3.8	4.2	4.0	
			3	4.1	4.3	4.2	
			4	3.3	3.5	3.4	
			5	3.8	4.2	4.0	
			Average CAIs			4.1	
			Average CAI *			4.5	
			CERCHAR Abrasiveness Index Classification			Extreme abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/30/12
Tested By:	bfm
Checked By:	mpd

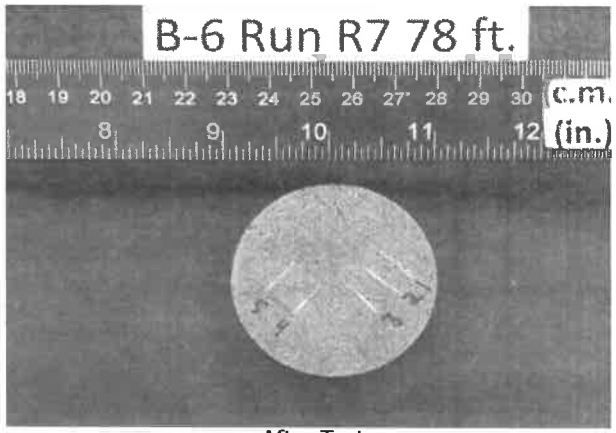
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-6	Run R7	75-85 (78)	1	1.2	3.5	2.4	
			2	2.3	4.2	3.3	
			3	2.2	4.9	3.6	
			4	3.6	4.2	3.9	
			5	3.3	5.1	4.2	
			Average CAIs			3.5	
			Average CAI *			3.9	
			CERCHAR Abrasiveness Index Classification			High abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/30/12
Tested By:	bfm
Checked By:	mpd

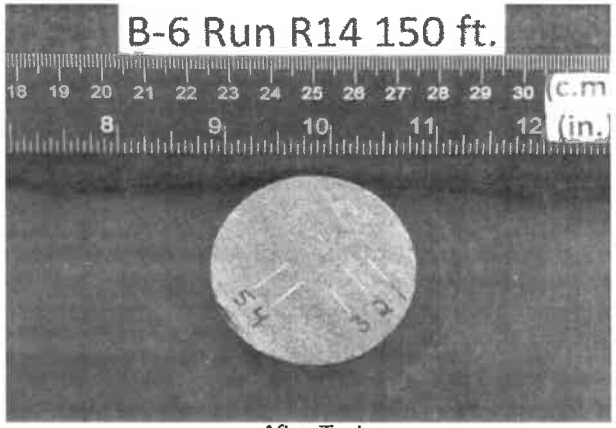
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-6	Run R14	145-155 (150)	1	2.8	4.1	3.5	
			2	3.1	5.8	4.5	
			3	2.5	2.4	2.5	
			4	3.1	5.6	4.4	
			5	3.4	5.4	4.4	
			Average CAIs			3.8	
			Average CAI *			4.3	
			CERCHAR Abrasiveness Index Classification			Extreme abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/08/12
Tested By:	daa
Checked By:	mpd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

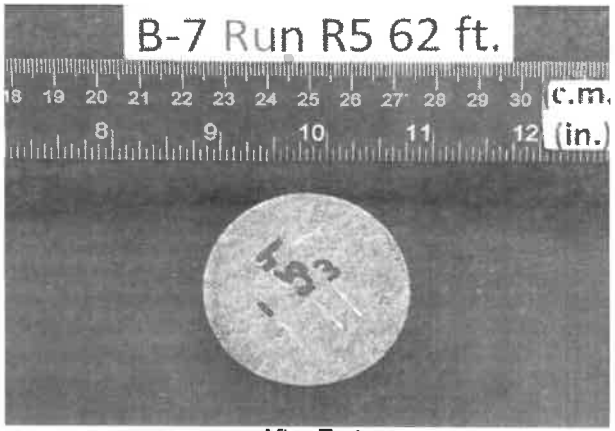
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-7	R5	55-65 (62)	1	4.2	4.9	4.6	
			2	4.5	4.8	4.7	
			3	5.1	4.8	5.0	
			4	4.2	4.5	4.4	
			5	4.5	5.2	4.9	
			Average CAIs			4.7	
			Average CAI *			5.1	
			CERCHAR Abrasiveness Index Classification			Extreme Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$

CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/30/12
Tested By:	bfm
Checked By:	mpd

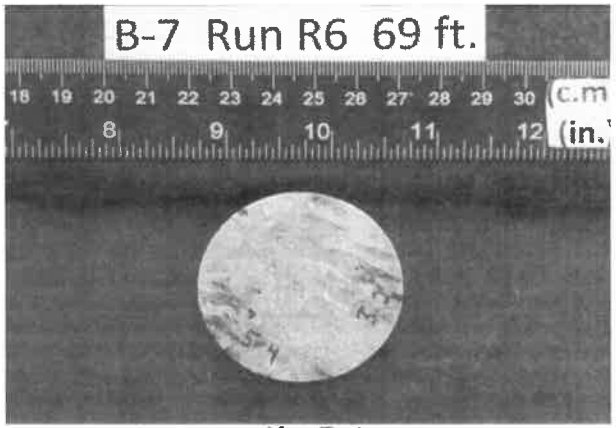
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-7	Run R-6	65-75 (69)	1	2.9	4.9	3.9	
			2	3.1	5.0	4.1	
			3	3.9	5.1	4.5	
			4	2.3	4.4	3.4	
			5	2.2	3.1	2.7	
			Average CAIs			3.7	
			Average CAI *			4.1	
			CERCHAR Abrasiveness Index Classification			Extreme abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/06/12
Tested By:	bfm
Checked By:	mpd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

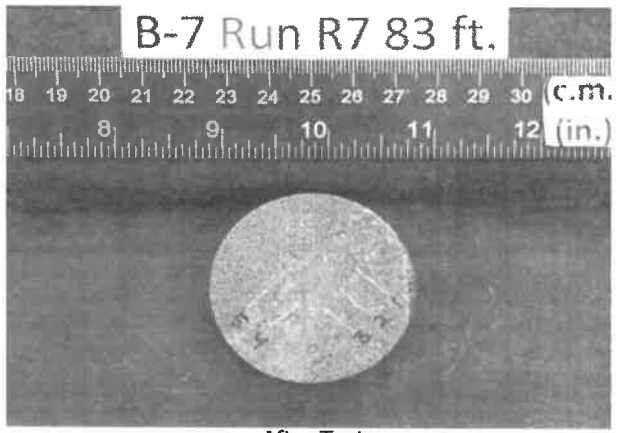
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-7	Run R7	75-85 (83)	1	2.3	4.4	3.4	
			2	3.2	3.4	3.3	
			3	3.6	3.3	3.5	
			4	2.5	4.2	3.4	
			5	2.4	4.1	3.3	
			Average CAIs			3.3	
			Average CAI *			3.8	
			CERCHAR Abrasiveness Index Classification			High abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$

CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

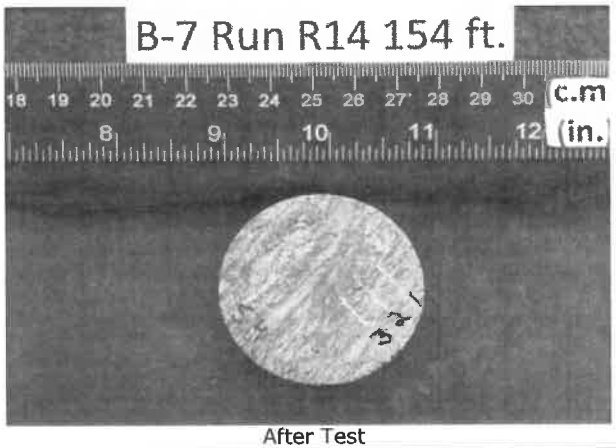
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/06/12
Tested By:	bfm
Checked By:	mpd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-7	Run R14	145-155 (154)	1	2.2	2.5	2.4	
			2	2.8	5.5	4.2	
			3	1.8	2.3	2.1	
			4	3.4	4.3	3.9	
			5	2.0	2.4	2.2	
			Average CAIs			2.9	
			Average CAI *			3.4	
			CERCHAR Abrasiveness Index Classification			High abrasiveness	

Notes:
Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/06/12
Tested By:	bfm
Checked By:	mpd

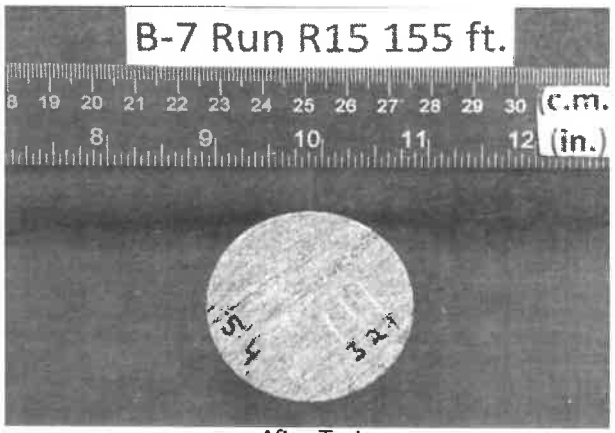
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-7	Run R15	155-165 (155)	1	2.5	5.3	3.9	
			2	3.1	4.2	3.7	
			3	3.0	5.1	4.1	
			4	1.1	4.2	2.7	
			5	3.4	4.6	4.0	
			Average CAIs			3.7	
			Average CAI *			4.1	
			CERCHAR Abrasiveness Index Classification			Extreme abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

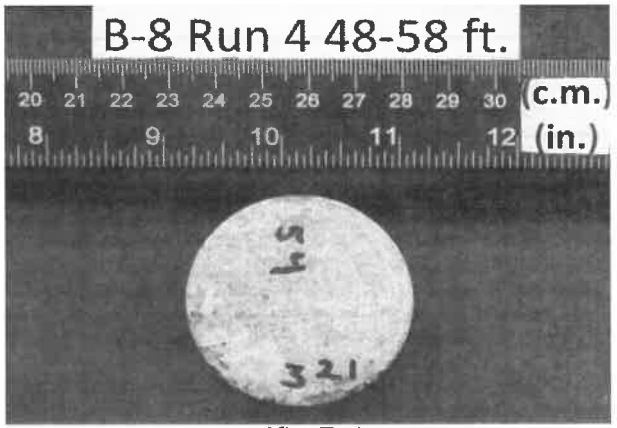
Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	06/29/12
Tested By:	bfm/jsc
Checked By:	mpd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-8	Run 4	48-58	1	5.1	4.3	4.7	
			2	4.5	5.3	4.9	
			3	3.9	5.6	4.8	
			4	3.7	4.8	4.3	
			5	3.8	3.9	3.9	
			Average CAIs			4.5	
			Average CAI *			4.9	
			CERCHAR Abrasiveness Index Classification			Extreme Abrasiveness	

Notes:
Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	06/29/12
Tested By:	bfm/jsc
Checked By:	mpd

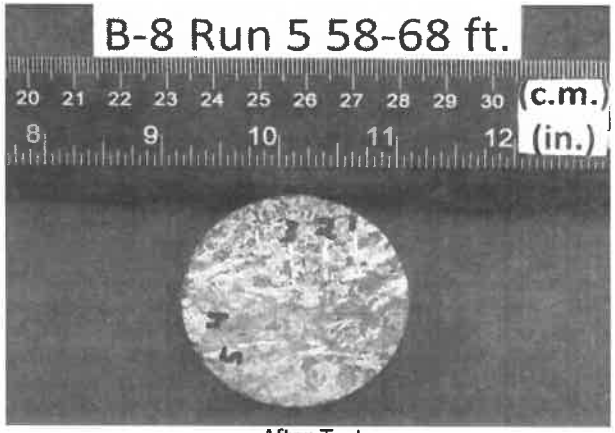
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-8	Run 5	58-68	1	1.2	3.9	2.6	
			2	3.1	4.5	3.8	
			3	3.5	4.4	4.0	
			4	2.3	4.1	3.2	
			5	3.7	4.9	4.3	
			Average CAIs			3.6	
			Average CAI *			4.0	
			CERCHAR Abrasiveness Index Classification			High Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	06/29/12
Tested By:	bfm/jsc
Checked By:	mpd

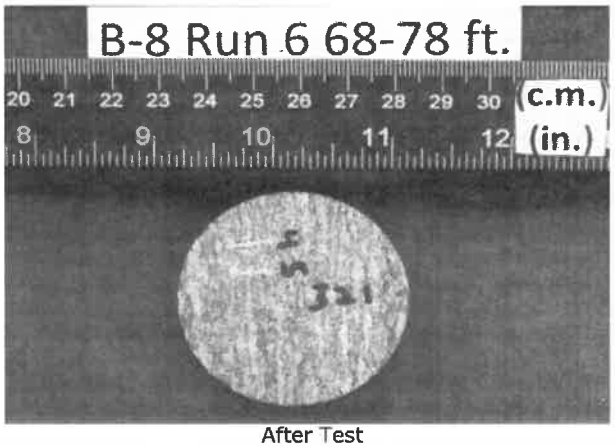
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-8	Run 6	68-78	1	2.9	4.1	3.5	
			2	2.1	2.5	2.3	
			3	1.9	2.4	2.2	
			4	0.1	0.5	0.3	
			5	2.3	3.3	2.8	
			Average CAIs			2.2	
			Average CAI *			2.7	
			CERCHAR Abrasiveness Index Classification			High Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	06/29/12
Tested By:	bfm/jsc
Checked By:	mpd

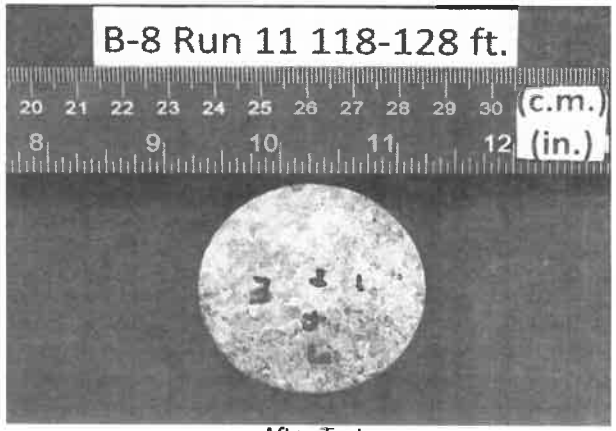
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-8	Run 11	118-128	1	4.3	6.2	5.3	
			2	2.8	3.3	3.1	
			3	6.3	7.1	6.7	
			4	5.6	4.8	5.2	
			5	5.3	6.2	5.8	
			Average CAIs			5.2	
			Average CAI *			5.6	
			CERCHAR Abrasiveness Index Classification			Extreme Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/06/12
Tested By:	bfm
Checked By:	mpd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

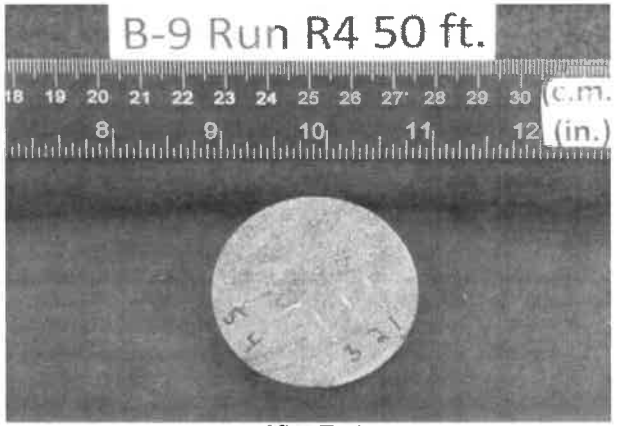
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-9	Run R4	45-55 (50)	1	5.7	4.5	5.1	
			2	4.5	3.4	4.0	
			3	2.7	5.6	4.2	
			4	3.3	4.2	3.8	
			5	1.2	3.8	2.5	
			Average CAIs			3.9	
			Average CAI *			4.3	
			CERCHAR Abrasiveness Index Classification			Extreme abrasiveness	

Notes:
- Test Surface: Saw Cut
- Moisture Condition: As Received
- Apparatus Type: Original CERCHAR
- Stylus Hardness: Rockwell Hardness 54/56 HRC
- Stylus Displacement Relative to Rock Fabric: Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$

CAIs = CERCHAR index for smooth (saw cut) surface

CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/30/12
Tested By:	bfm
Checked By:	mpd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

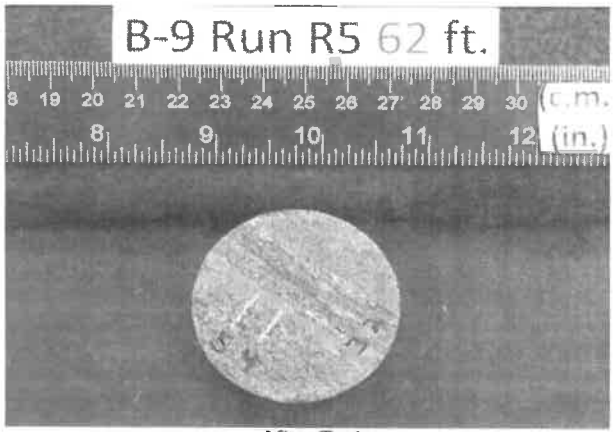
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-9	Run R5	55-65 (62)	1	0.1	1.0	0.6	
			2	0.0	0.3	0.2	
			3	1.9	0.7	1.3	
			4	1.5	3.2	2.4	
			5	0.9	3.1	2.0	
			Average CAIs			1.3	
			Average CAI *			1.7	
			CERCHAR Abrasiveness Index Classification			Medium abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$

CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/08/12
Tested By:	daa
Checked By:	mpd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

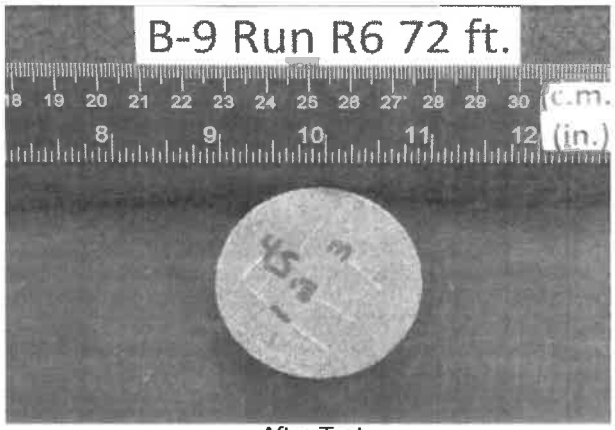
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-9	Run R6	65-75 (72)	1	3.2	3.7	3.5	
			2	3.5	3.8	3.7	
			3	3.1	3.3	3.2	
			4	3.8	4.2	4.0	
			5	3.2	4.7	4.0	
			Average CAIs			3.7	
			Average CAI *			4.1	
			CERCHAR Abrasiveness Index Classification			Extreme abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$

CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	08/06/12
Tested By:	bfm
Checked By:	mpd

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

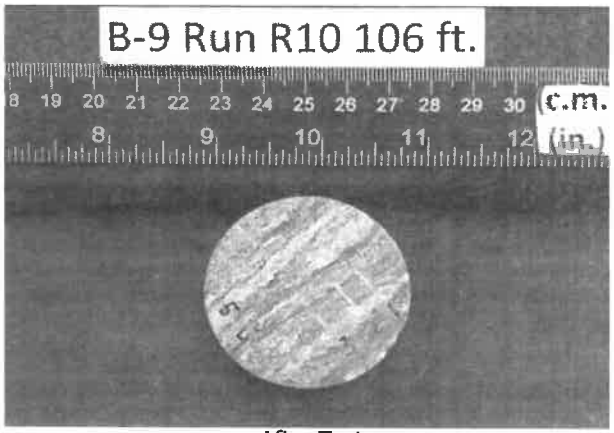
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-9	Run R10	105-115 (106)	1	0.9	1.6	1.3	
			2	2.3	3.9	3.1	
			3	3.4	4.2	3.8	
			4	1.4	3.1	2.3	
			5	1.3	4.5	2.9	
			Average CAIs			2.7	
			Average CAI *			3.1	
			CERCHAR Abrasiveness Index Classification			High abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$

CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/19/12
Tested By:	bfm
Checked By:	njh

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

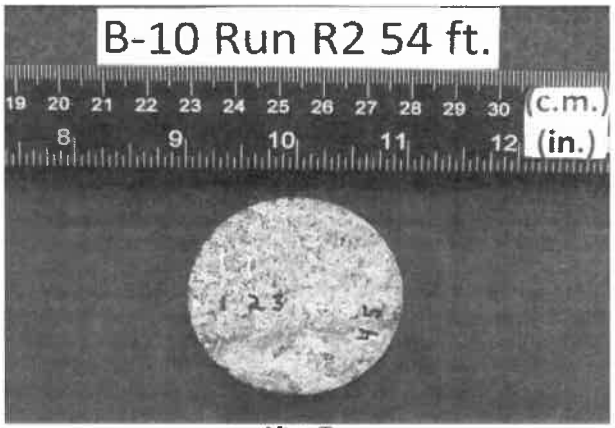
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-10	Run R2	54	1	2.0	1.2	1.6	
			2	2.1	3.2	2.7	
			3	0.3	1.5	0.9	
			4	0.9	0.4	0.7	
			5	0.0	0.1	0.1	
			Average CAIs			1.2	
			Average CAI *			1.6	
			CERCHAR Abrasiveness Index Classification			Medium Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$

CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/19/12
Tested By:	bfm
Checked By:	njh

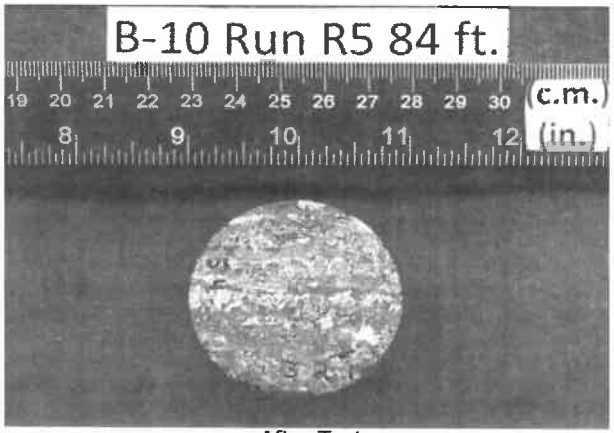
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-10	Run R5	84	1	0.6	0.9	0.8	
			2	0.0	0.2	0.1	
			3	0.0	0.0	0.0	
			4	0.1	0.0	0.1	
			5	0.0	0.0	0.0	
			Average CAIs			0.2	
			Average CAI *			0.7	
			CERCHAR Abrasiveness Index Classification			Low Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/19/12
Tested By:	bfm
Checked By:	njh

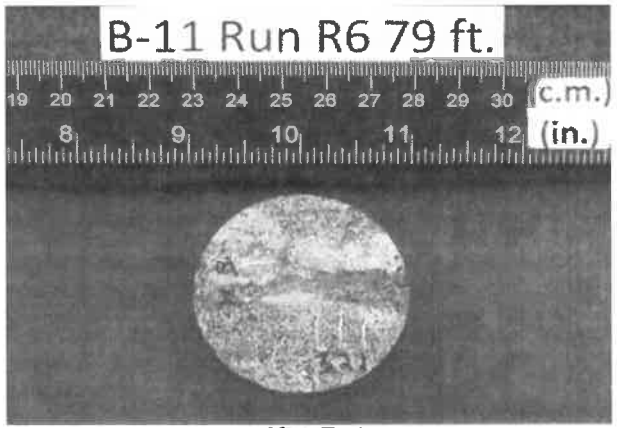
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-11	Run R6	79	1	2.1	2.9	2.5	
			2	2.4	3.1	2.8	
			3	2.2	3.4	2.8	
			4	2.9	3.1	3.0	
			5	3.9	5.1	4.5	
			Average CAIs			3.1	
			Average CAI *			3.6	
CERCHAR Abrasiveness Index Classification						High Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/19/12
Tested By:	bfm
Checked By:	njh

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

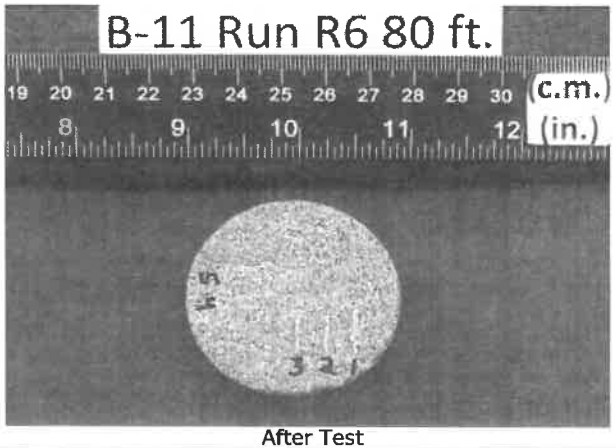
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-11	Run R6	80	1	4.3	3.7	4.0	
			2	4.6	4.8	4.7	
			3	3.9	5.2	4.6	
			4	4.4	5.1	4.8	
			5	3.3	4.9	4.1	
			Average CAIs			4.4	
			Average CAI *			4.9	
			CERCHAR Abrasiveness Index Classification			Extreme Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$

CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/19/12
Tested By:	bfm
Checked By:	njh

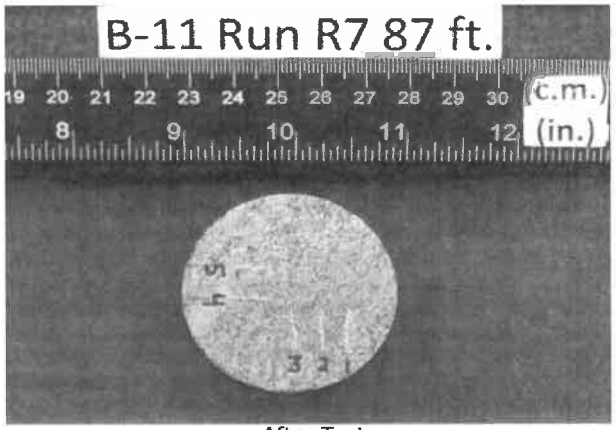
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-11	Run R7	87	1	2.9	6.0	4.5	
			2	4.8	3.7	4.3	
			3	2.4	5.1	3.8	
			4	3.3	5.6	4.5	
			5	3.1	4.4	3.8	
			Average CAIs			4.1	
			Average CAI *			4.6	
			CERCHAR Abrasiveness Index Classification			Extreme Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/19/12
Tested By:	bfm
Checked By:	njh

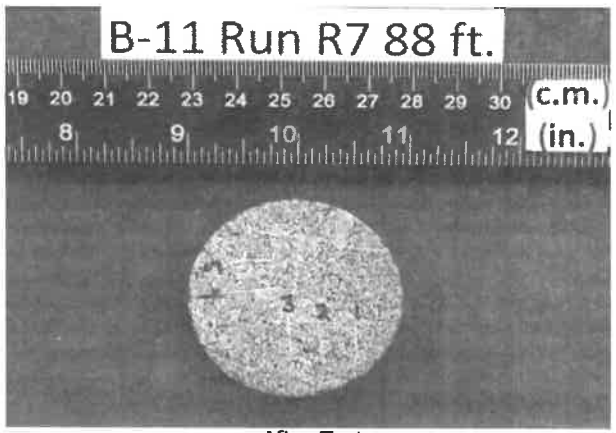
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-11	Run R7	88	1	2.9	4.1	3.5	
			2	3.5	3.7	3.6	
			3	2.6	4.2	3.4	
			4	2.7	3.5	3.1	
			5	3.4	2.8	3.1	
			Average CAIs			3.3	
			Average CAI *			3.8	
			CERCHAR Abrasiveness Index Classification			High Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/19/12
Tested By:	bfm
Checked By:	njh

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

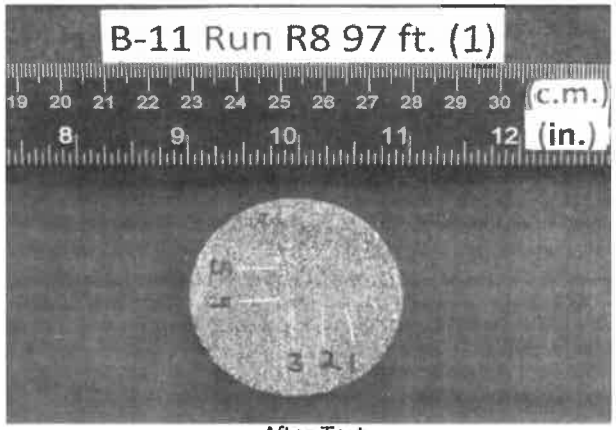
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-11	Run R8 (1)	97	1	4.3	3.9	4.1	
			2	3.4	4.7	4.1	
			3	2.8	4.1	3.5	
			4	4.5	3.9	4.2	
			5	4.2	4.5	4.4	
			Average CAIs			4.0	
			Average CAI *			4.5	
			CERCHAR Abrasiveness Index Classification			Extreme Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$

CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/19/12
Tested By:	bfm
Checked By:	njh

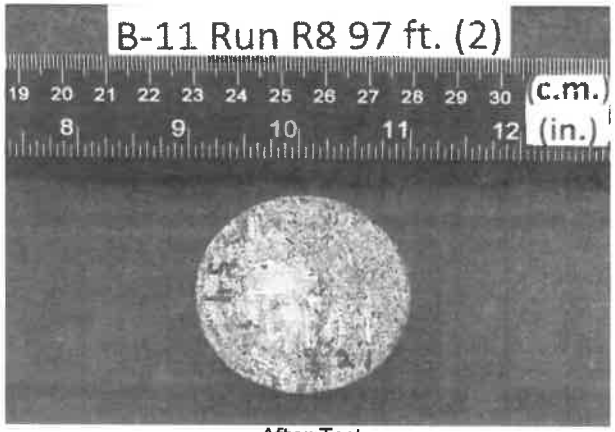
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-11	Run R8 (2)	97	1	3.2	2.1	2.7	
			2	2.6	2.8	2.7	
			3	4.7	3.6	4.2	
			4	3.4	4.8	4.1	
			5	3.1	3.5	3.3	
			Average CAIs			3.4	
			Average CAI *			3.8	
			CERCHAR Abrasiveness Index Classification			High Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/19/12
Tested By:	bfm
Checked By:	njh

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

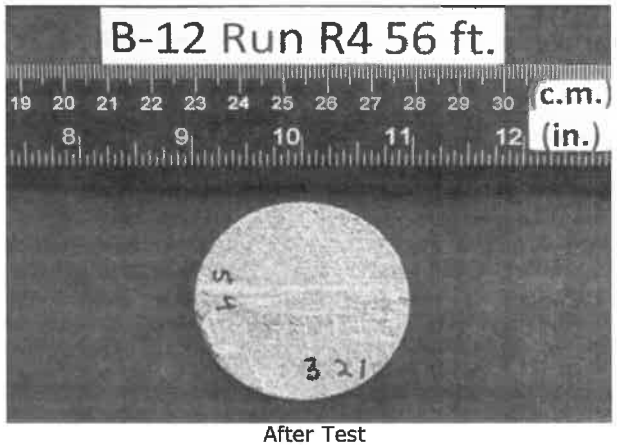
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-12	Run R4	56	1	3.1	4.9	4.0	
			2	3.9	4.8	4.4	
			3	3.8	4.6	4.2	
			4	3.0	5.1	4.1	
			5	3.9	4.7	4.3	
			Average CAIs			4.2	
			Average CAI *			4.6	
			CERCHAR Abrasiveness Index Classification			Extreme Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$

CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/20/12
Tested By:	bfm
Checked By:	njh

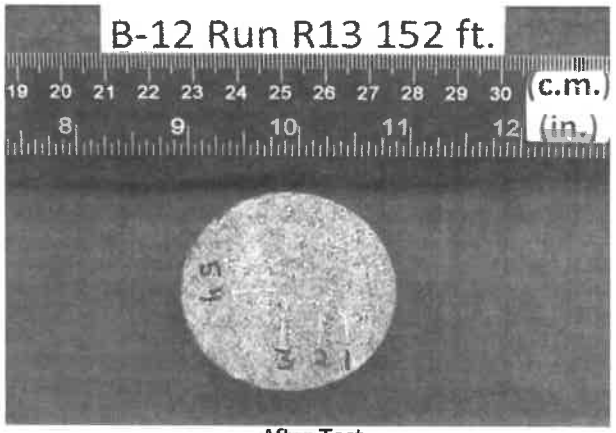
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-12	Run R13	152	1	4.6	5.4	5.0	
			2	2.9	5.3	4.1	
			3	1.5	3.7	2.6	
			4	5.3	2.8	4.1	
			5	5.8	4.1	5.0	
			Average CAIs			4.1	
			Average CAI *			4.6	
			CERCHAR Abrasiveness Index Classification			Extreme Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/20/12
Tested By:	bfm
Checked By:	njh

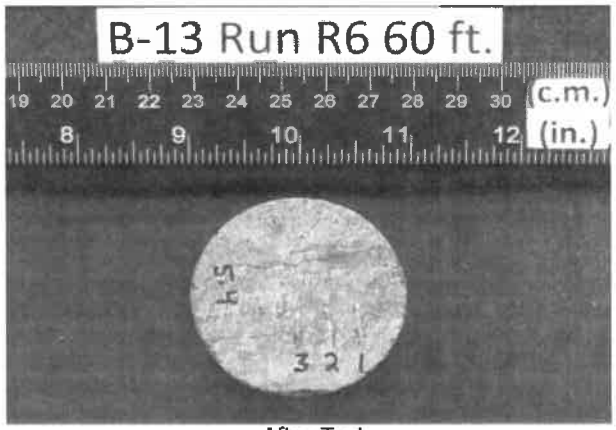
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-13	Run R6	60	1	0.2	1.4	0.8	
			2	0.4	2.3	1.4	
			3	0.1	1.3	0.7	
			4	4.1	5.4	4.8	
			5	2.2	3.9	3.1	
			Average CAIs			2.1	
			Average CAI *			2.6	
			CERCHAR Abrasiveness Index Classification			High Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/20/12
Tested By:	bfm
Checked By:	njh

Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

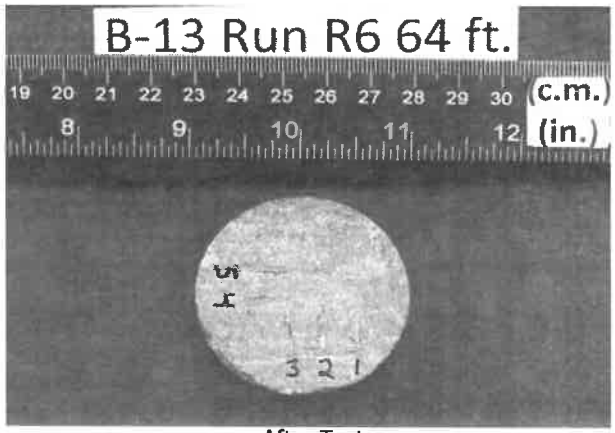
Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-13	Run R6	64	1	0.1	1.9	1.0	
			2	0.1	0.5	0.3	
			3	0.9	2.1	1.5	
			4	0.0	0.3	0.2	
			5	2.1	3.1	2.6	
			Average CAIs			1.1	
			Average CAI *			1.6	
			CERCHAR Abrasiveness Index Classification			Medium Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$

CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/20/12
Tested By:	bfm
Checked By:	njh

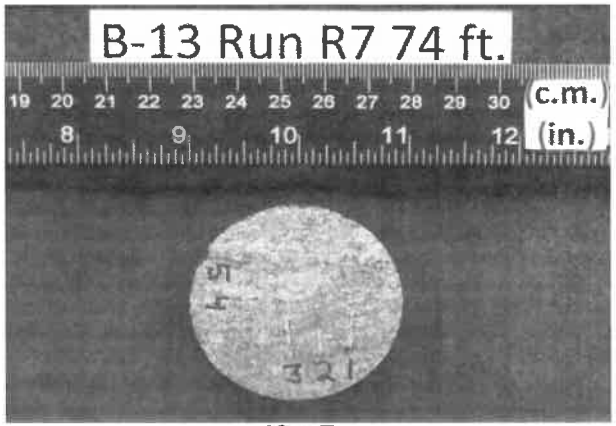
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-13	Run R7	74	1	1.3	3.9	2.6	
			2	1.9	3.7	2.8	
			3	1.7	4.0	2.9	
			4	0.8	2.7	1.8	
			5	3.3	2.1	2.7	
			Average CAIs			2.5	
			Average CAI *			3.0	
			CERCHAR Abrasiveness Index Classification			High Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* $CAI = (0.99 \times CAI_S) + 0.48$
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

GeoTesting EXPRESS

Client:	CDM Smith
Project Name:	New 20" Sub Aqueous Water Main
Project Location:	Eastchester Bay Crossing, Bronx, NY
GTX #:	11987
Test Date:	07/20/12
Tested By:	bfm
Checked By:	njh

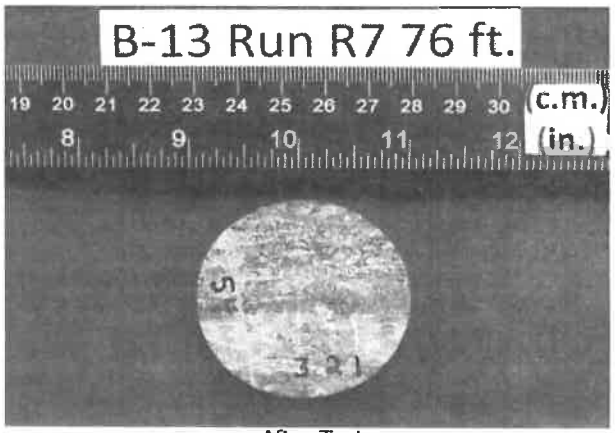
Abrasiveness of Rock Using the CERCHAR Method by ASTM D 7625

Boring ID	Sample ID	Depth, ft.	Stylus No.	Reading 1	Reading 2	Average	Comments
B-13	Run R7	76	1	4.4	7.3	5.9	
			2	3.5	5.7	4.6	
			3	4.1	5.2	4.7	
			4	0.0	0.1	0.1	
			5	1.4	4.1	2.8	
			Average CAIs			3.6	
			Average CAI *			4.0	
			CERCHAR Abrasiveness Index Classification			Extreme Abrasiveness	

Notes:

Test Surface: Saw Cut
Moisture Condition: As Received
Apparatus Type: Original CERCHAR
Stylus Hardness: Rockwell Hardness 54/56 HRC
Stylus Displacement Relative to Rock Fabric:
Stylui 1-3: Normal; Stylui 4-5: Parallel

* CAI = (0.99 x CAI_S) + 0.48
CAIs = CERCHAR index for smooth (saw cut) surface
CAI = CERCHAR index for natural surface



After Test

New 20" Sub Aqueous Water Main

GTX Project No. 11987

Petrographic Report #3DT

August 3, 2012

for

Mark Dobday
GeoTesting Express, Inc.
125 Nagog Park
Acton, MA 01720

by



Michael DePangher, Ph.D.
Spectrum Petrographics, Inc.

Key to Petrographic and Photomicrographic Descriptions

Clay minerals common in altered rocks must often be identified by X-ray diffraction either because their optic properties are not diagnostic or because they are too fine grained to be reliably identified by optical methods. The term "clay" is used herein to denote fine grained phyllosilicates in general. Under ideal conditions, it is often possible to optically discriminate between 4 major groups: kaolinite, smectite, mica (including illite), and chlorite. This is done whenever conditions permit.

The term "sericite" is applied to fine grained colorless phyllosilicates that show upper 2nd order maximum interference colors. These could include muscovite, illite, paragonite, lepidolite, margarite, clintonite, pyrophyllite, and talc. The term "intermediate clay" is applied to fine grained very pale or colorless phyllosilicates that show upper 1st order maximum interference colors. These are probably dominated by chlorite, smectite, and mixed-layer illite/smectite.

The term "opaques" is used to refer to all materials opaque (and sometimes semi-opaque) to transmitted light. The term "FEOH" is herein used to indicate fine grained, yellowish to reddish brown, earthy materials of varying opacity in transmitted light. FEOH is probably mostly Fe oxy-hydroxides but may sometimes include sphalerite, realgar, orpiment, jarosite, a number of Mn oxy-hydroxides, and organic matter.

A question mark after a rock or mineral name in a petrographic description means that there is uncertainty about the identification of that rock or mineral.

Particle size distributions are given as (A-B μm), where A and B are the median and largest particle sizes, respectively, in microns. A question mark (?) in the position of A or B indicates that the value of A or B was indeterminate, probably because of excessively large or small particle size or statistically insignificant numbers of particles.

Mineral abundances are visual estimates for an entire slide. For multi-lithologic materials (cuttings, etc...), mineralogy, textures, and alteration are described only for the dominant lithology.

Section preparation codes are as follows: (1) Format: 27 x 46 mm, 51 x 76 mm, or 1" round; (2) Finish: standard lapping (STD) or polished (POL); (3) Stains: sodium cobaltinitrite (SCN), alizarin red S (ARS), potassium ferricyanide (PF), and barium chloride + potassium rhodizonate (BCPR); and (4) Cover: none, permanent Loctite acrylic (PLA), or removable Canada Balsam (RCB).

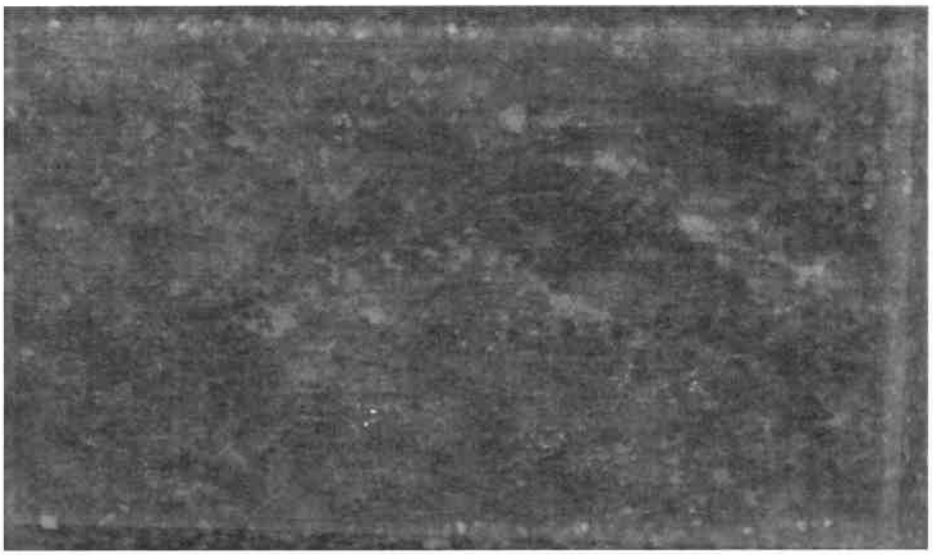
Photomicrograph captions/labels contain the following items of information in consecutive order separated by forward slashes: (1) sample identification; (2) JPG image file name composed of concatenated job identification code + sequence number; (3) illumination type; and (5) field of view (FOV). For illumination types, "PPL" indicates plane-polarized light; "XPL indicates cross-polarized light; "R" indicates reflected light. "550" means that a 550 nanometer wavelength plate was inserted in the light path. "C" indicates that the substage condenser was in (sometimes used for Fe-oxides). "O" indicates substage condenser in an oblique position. These various illuminations can be combined. "CON" indicates conoscopic illumination. POL means that a polarizing filter was used with the lens, and DAY means the sample was photographed in diffused daylight.

Features on photomicrographs are indicated by the number of the feature in the ALTERATION section of the text or by a mineral name abbreviation: **Q**uartz, **P**lagioclase, **K**-feldspar, **ser**icite, **b**io**t**ite, **fe**rroan **c**al**c**ite, **act**inolite.

Igneous rock classifications are according to IUGS (1973; 1979); sandstones are classified according to McBride (1963); mudrocks are classified according to Picard (1971); and carbonates are classified according to Folk (1959).

Hand Specimen Images

B-8 11 118-128



SAMPLE # **B-8 11 118-128** August 3, 2012

ROCK NAME ALTERED BIOTITE-PLAGIOCLASE-QUARTZ SCHIST – probably formed by regional dynamothermal ductile metamorphism, brittle deformation, and alteration (secondary clay + carbonate) of a subarkose sedimentary protolith.

MINERALS Quartz (72%) + plagioclase (10%) + biotite (10%) + clay (3%) + carbonate (3%) + muscovite (2%) + zircon (<1%).

TEXTURES Metamorphic, equigranular, granoblastic. Ductile and brittle deformation have produced a moderately directed fabric.

Porphyroblasts (0%) were not observed.

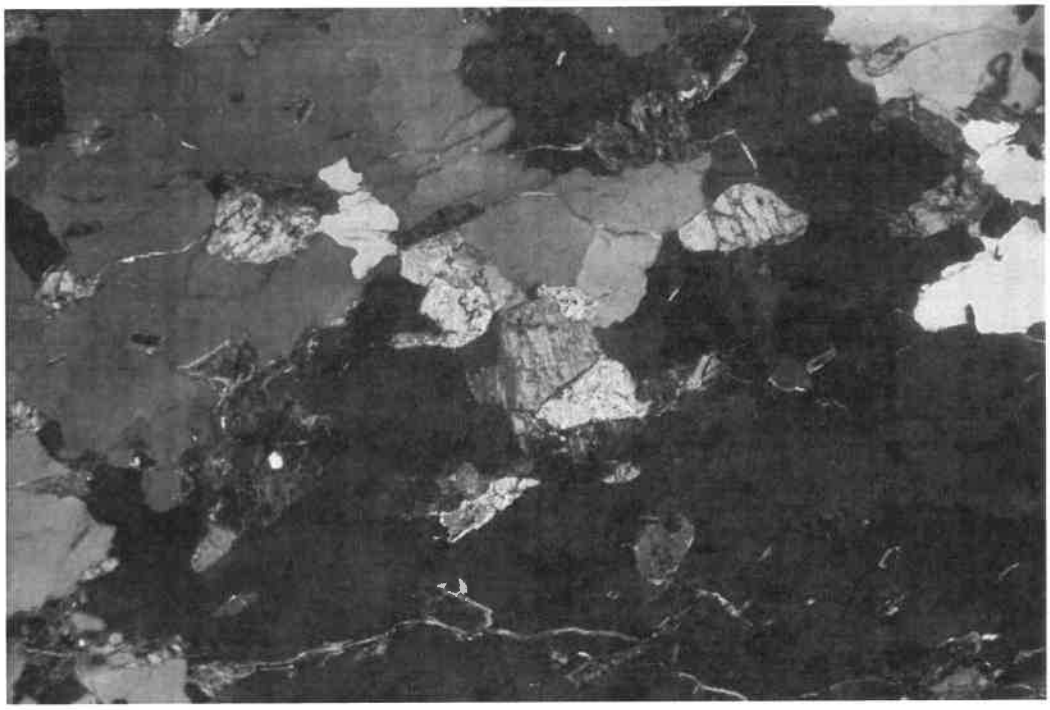
Matrix (100%) is composed of seriate up to 6 mm, [quartz + [plagioclase moderately altered to clay ± carbonate] + biotite + muscovite. Grain contacts are sutured.

ALTERATION Alteration features in relative chronological order from oldest to youngest are: (1) regional dynamothermal ductile metamorphism; (2) brittle deformation; and (3) infilling of cracks from #2 by carbonate.

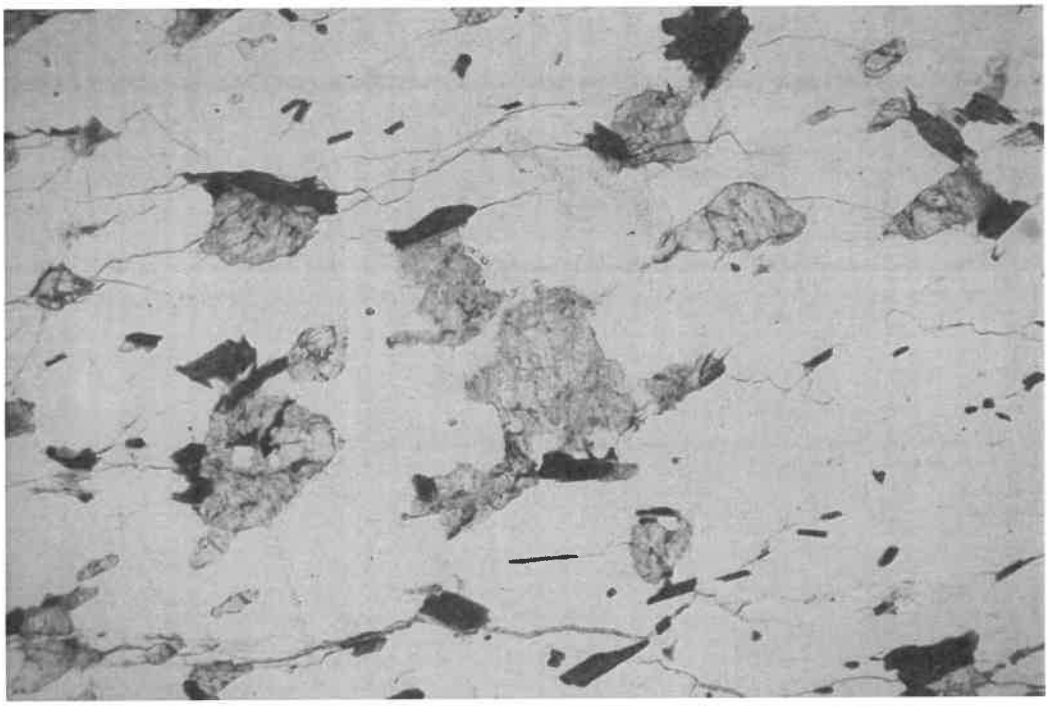
SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top ½) Cover: PLA

IMAGES

B-8 11 118-128 3DT_001.jpg/XPL/28X ALTERED BIOTITE-PLAGIOCLASE-QUARTZ SCHIST showing typical appearance (same view as 3DT_002.jpg).



B-8 11 118-128 3DT_001.jpg/XPL/28X ALTERED BIOTITE-PLAGIOCLASE-QUARTZ SCHIST showing typical appearance (same view as 3DT_002.jpg).



New 20" Sub Aqueous Water Main

GTX Project No. 11987

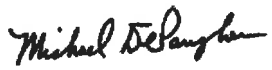
Petrographic Report #3EZ

August 4, 2012

for

Mark Dobday
GeoTesting Express, Inc.
125 Nagog Park
Acton, MA 01720

by



Michael DePangher, Ph.D.
Spectrum Petrographics, Inc.

Key to Petrographic and Photomicrographic Descriptions

Clay minerals common in altered rocks must often be identified by X-ray diffraction either because their optic properties are not diagnostic or because they are too fine grained to be reliably identified by optical methods. The term "clay" is used herein to denote fine grained phyllosilicates in general. Under ideal conditions, it is often possible to optically discriminate between 4 major groups: kaolinite, smectite, mica (including illite), and chlorite. This is done whenever conditions permit.

The term "sericite" is applied to fine grained colorless phyllosilicates that show upper 2nd order maximum interference colors. These could include muscovite, illite, paragonite, lepidolite, margarite, clintonite, pyrophyllite, and talc. The term "intermediate clay" is applied to fine grained very pale or colorless phyllosilicates that show upper 1st order maximum interference colors. These are probably dominated by chlorite, smectite, and mixed-layer illite/smectite.

The term "opaques" is used to refer to all materials opaque (and sometimes semi-opaque) to transmitted light. The term "FEOH" is herein used to indicate fine grained, yellowish to reddish brown, earthy materials of varying opacity in transmitted light. FEOH is probably mostly Fe oxy-hydroxides but may sometimes include sphalerite, realgar, orpiment, jarosite, a number of Mn oxy-hydroxides, and organic matter.

A question mark after a rock or mineral name in a petrographic description means that there is uncertainty about the identification of that rock or mineral.

Particle size distributions are given as (A-B μm), where A and B are the median and largest particle sizes, respectively, in microns. A question mark (?) in the position of A or B indicates that the value of A or B was indeterminate, probably because of excessively large or small particle size or statistically insignificant numbers of particles.

Mineral abundances are visual estimates for an entire slide. For multi-lithologic materials (cuttings, etc...), mineralogy, textures, and alteration are described only for the dominant lithology.

Section preparation codes are as follows: (1) Format: 27 x 46 mm, 51 x 76 mm, or 1" round; (2) Finish: standard lapping (STD) or polished (POL); (3) Stains: sodium cobaltinitrite (SCN), alizarin red S (ARS), potassium ferricyanide (PF), and barium chloride + potassium rhodizonate (BCPR); and (4) Cover: none, permanent Loctite acrylic (PLA), or removable Canada Balsam (RCB).

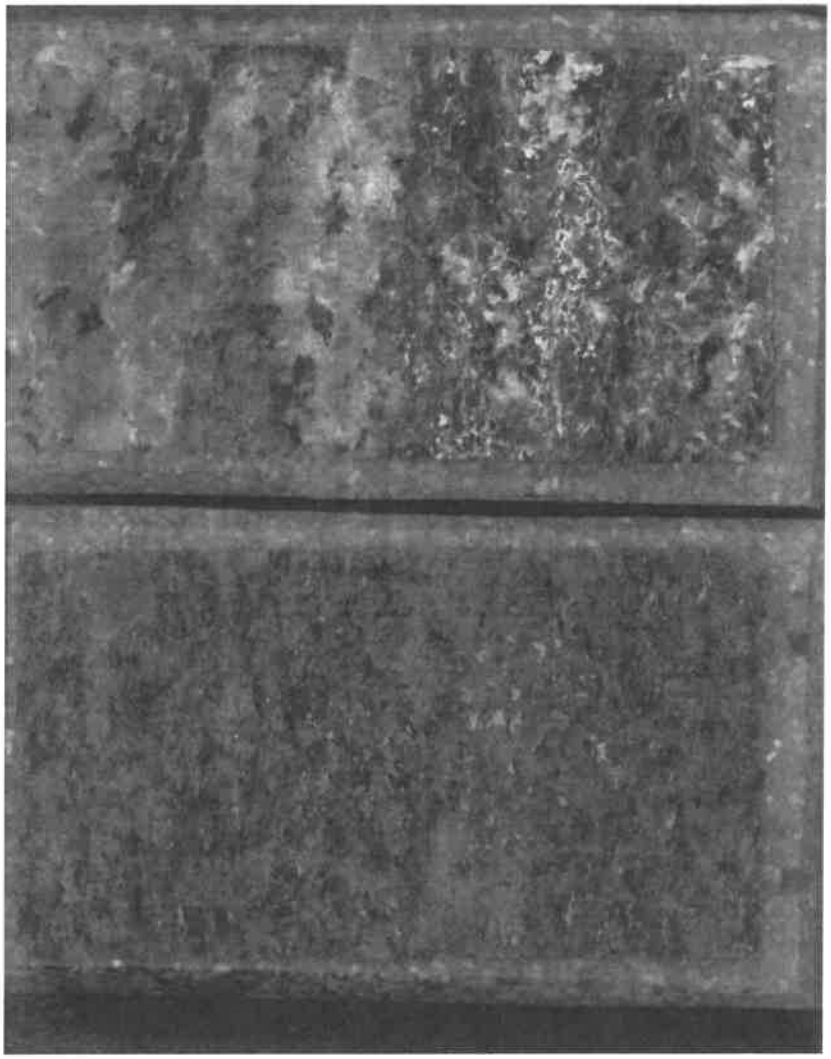
Photomicrograph captions/labels contain the following items of information in consecutive order separated by forward slashes: (1) sample identification; (2) JPG image file name composed of concatenated job identification code + sequence number; (3) illumination type; and (5) field of view (FOV). For illumination types, "PPL" indicates plane-polarized light; "XPL indicates cross-polarized light; "R" indicates reflected light. "550" means that a 550 nanometer wavelength plate was inserted in the light path. "C" indicates that the substage condenser was in (sometimes used for Fe-oxides). "O" indicates substage condenser in an oblique position. These various illuminations can be combined. "CON" indicates conoscopic illumination. POL means that a polarizing filter was used with the lens, and DAY means the sample was photographed in diffused daylight.

Features on photomicrographs are indicated by the number of the feature in the ALTERATION section of the text or by a mineral name abbreviation: **Q**uartz, **P**lagioclase, **K**-feldspar, **ser**icite, **biot**ite, **fe**rroan **calc**ite, **act**inolite.

Igneous rock classifications are according to IUGS (1973; 1979); sandstones are classified according to McBride (1963); mudrocks are classified according to Picard (1971); and carbonates are classified according to Folk (1959).

Hand Specimen Images

B-10 R2 44-55ft



B-12 R13 145-155ft

SAMPLE # **B-10 R2 44-55ft** August 4, 2012

ROCK NAME ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST – probably formed by regional dynamothermal ductile metamorphism, brittle deformation, and alteration (secondary clay + carbonate) of an arkose sedimentary protolith.

MINERALS Quartz (35%) + biotite (35%) + clay (probably kaolinite) (12%) + K-feldspar (10%) + sillimanite (3%) + muscovite (3%) + carbonate (1%) + garnet (1%) + zircon (<1%).

TEXTURES Metamorphic, sparsely porphyroblastic. Metamorphism has produced a moderately directed fabric.

Porphyroblasts (1%) are subhedral, whole, isolated, 1440-7920 µm.

Garnet (1%) shows moderate sieve texture.

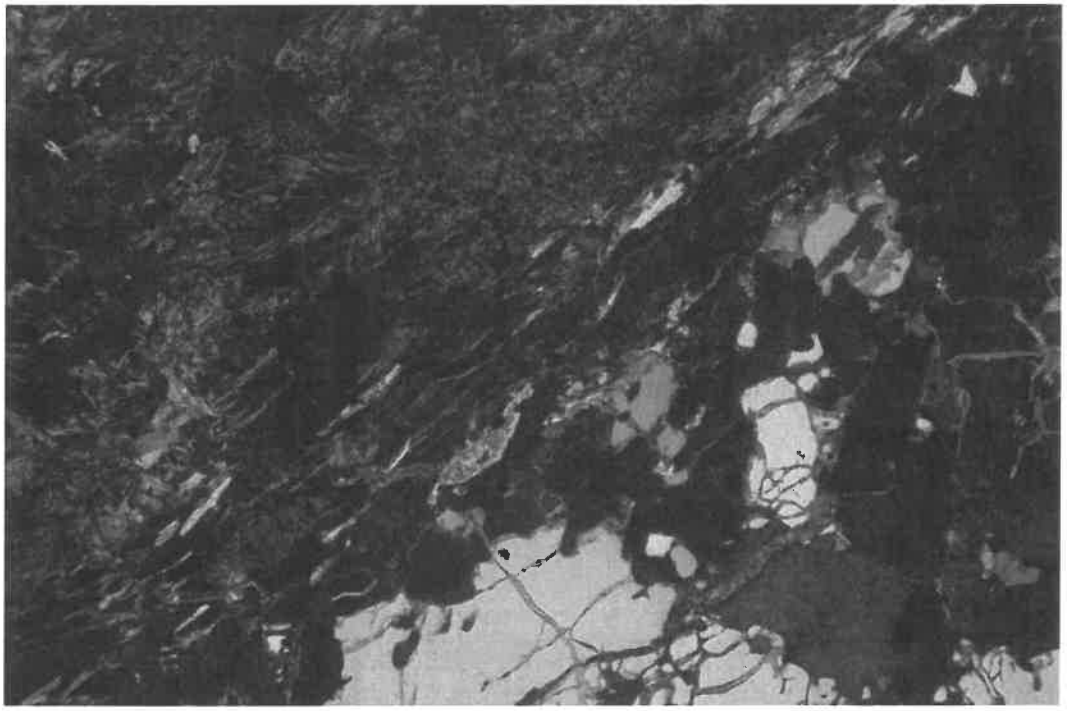
Matrix (99%) is composed of granoblastic [quartz + [biotite moderately altered to sillimanite] + K-feldspar + [plagioclase completely altered to clay ± carbonate] + sillimanite strongly altered to clay]]. Grain contacts are straight to sutured.

ALTERATION Alteration features in relative chronological order from oldest to youngest are: (1) regional dynamothermal, ductile, prograde metamorphism in which biotite eventually began to break down to sillimanite; and (2a) sillimanite strongly altered to clay. Alteration features of indeterminate relative ages: (1) plagioclase completely altered to clay ± carbonate.

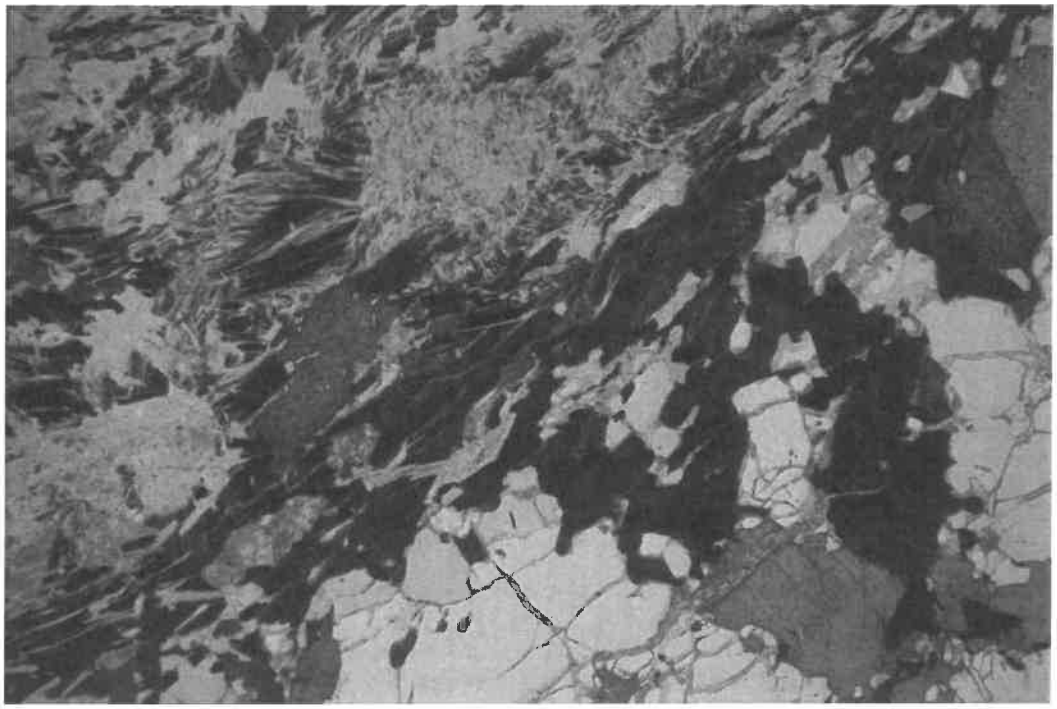
SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top ½) Cover: PLA

IMAGES

B-10 R2 44-55ft 3EZ_001.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance (same view as 3ESZ_002.jpg).



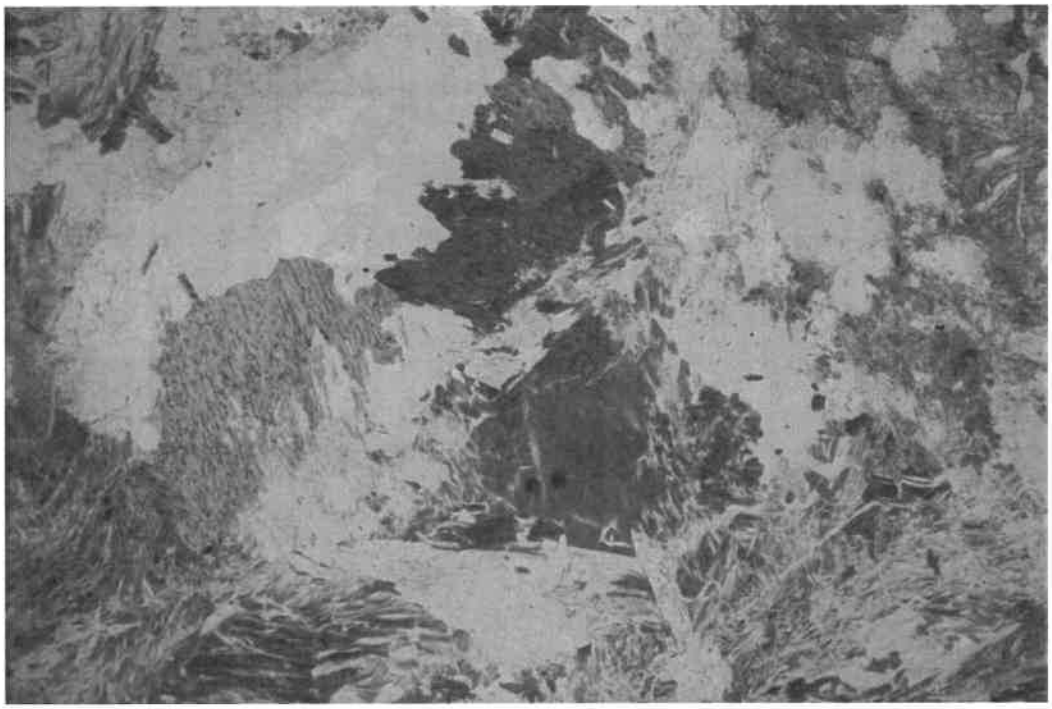
B-10 R2 44-55ft 3EZ_002.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance (same view as 3ESZ_002.jpg).



B-10 R2 44-55ft 3EZ_003.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance (same view as 3ESZ_004.jpg).



B-10 R2 44-55ft 3EZ_004.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance (same view as 3ESZ_003.jpg).



SAMPLE # **B-12 R13 145-155ft** August 4, 2012

ROCK NAME ALTERED GARNET-OPAQUE-QUARTZ-BIOTITE-PLAGIOCLASE SCHIST – probably formed by regional dynamothermal ductile metamorphism and alteration (secondary muscovite + carbonate) of an arkose sedimentary protolith.

MINERALS Plagioclase (44%) + biotite (25%) + quartz (20%) + opaques (6%) + garnet (3%) + muscovite (2%) + carbonate (<1%) + zircon (<1%) + apatite (<1%).

TEXTURES Metamorphic, sparsely porphyroblastic. Metamorphism has produced a moderately directed fabric.

Porphyroblasts (3%) are subhedral, whole, isolated, 1260-5400 µm.

Garnet (3%) shows moderate sieve texture.

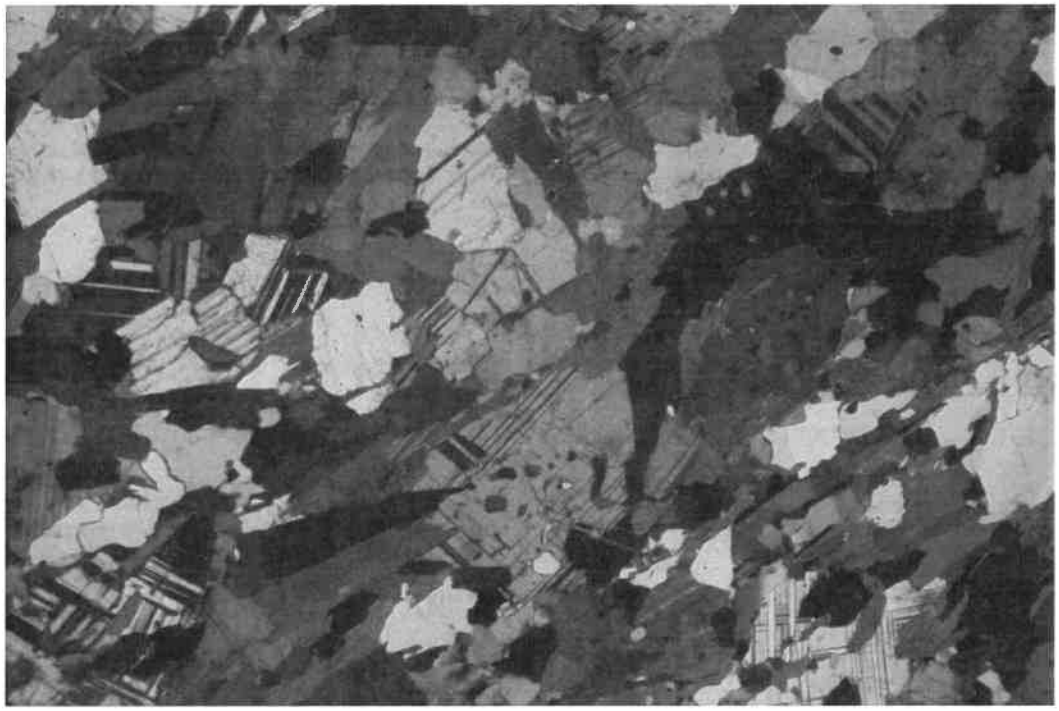
Matrix (97%) is composed of granoblastic [plagioclase + [biotite weakly altered to muscovite ± carbonate] + quartz + opaques]. Grain contacts are straight to sutured.

ALTERATION No other alteration features were observed.

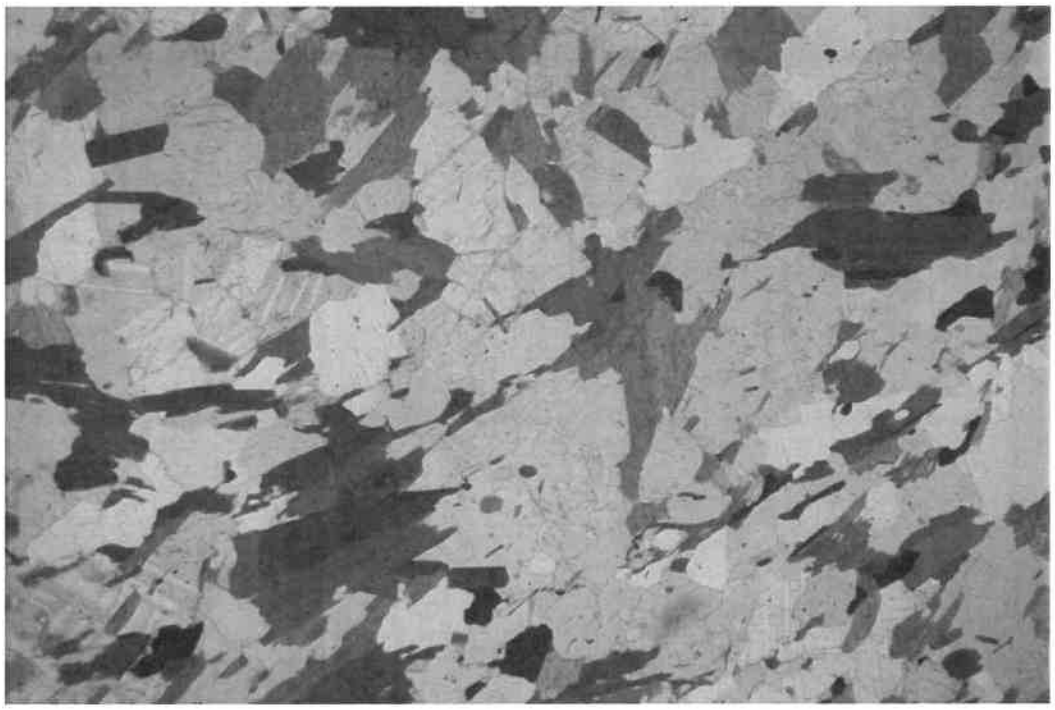
SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top ½) Cover: PLA

IMAGES

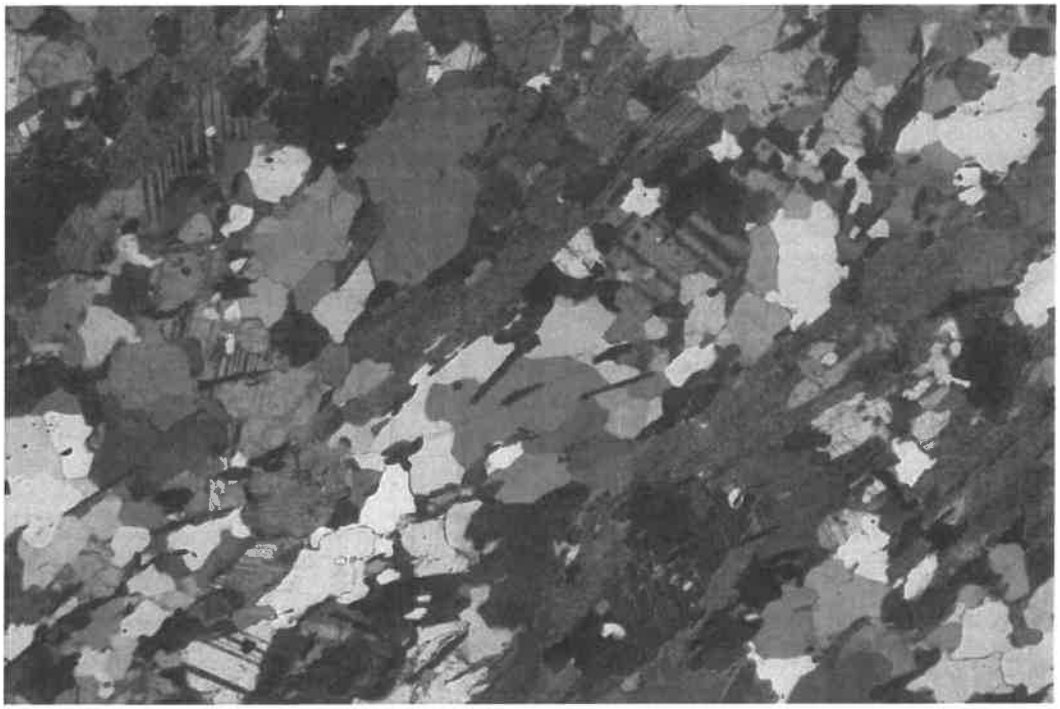
B-12 R13 145-155ft 3EZ_005.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED GARNET-OPAQUE-QUARTZ-BIOTITE-PLAGIOCLASE SCHIST showing typical appearance (same view as 3EZ_006.jpg).



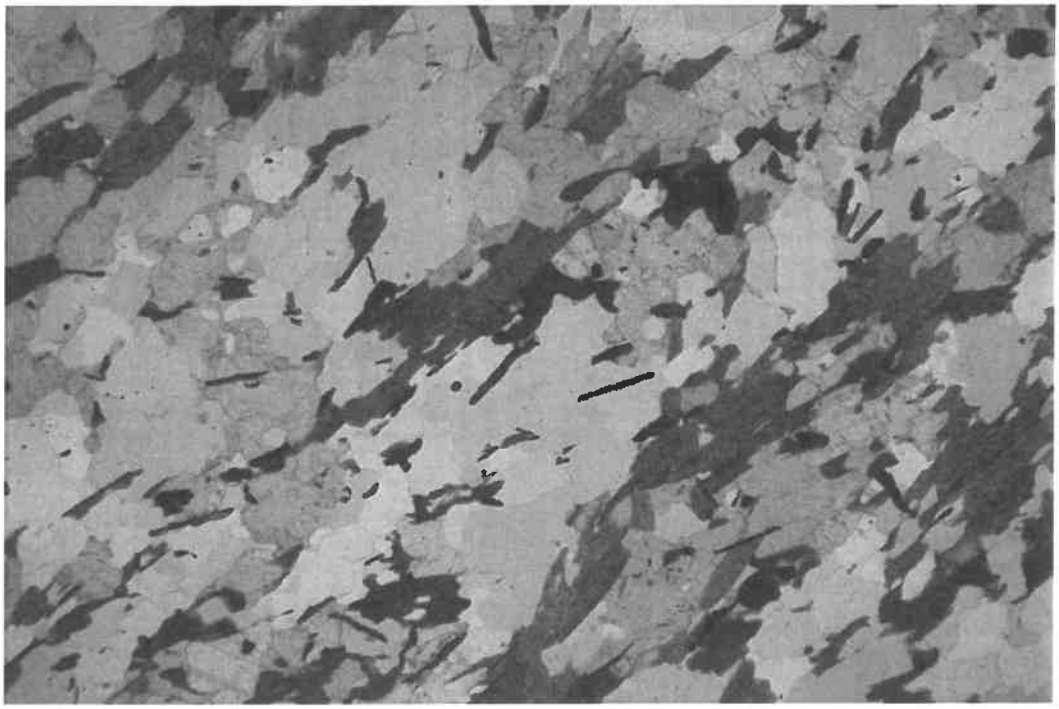
B-12 R13 145-155ft 3EZ_006.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED GARNET-OPAQUE-QUARTZ-BIOTITE-PLAGIOCLASE SCHIST showing typical appearance (same view as 3EZ_005.jpg).



B-12 R13 145-155ft 3EZ_007.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED GARNET-OPAQUE-QUARTZ-BIOTITE-PLAGIOCLASE SCHIST showing typical appearance (same view as 3EZ_008.jpg).



B-12 R13 145-155ft 3EZ_008.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED GARNET-OPAQUE-QUARTZ-BIOTITE-PLAGIOCLASE SCHIST showing typical appearance (same view as 3EZ_007.jpg).



New 20" Sub Aqueous Water Main

GTX Project No. 11987

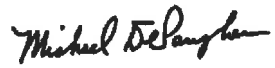
Petrographic Report #3FJ

August 4, 2012

for

Mark Dobday
GeoTesting Express, Inc.
125 Nagog Park
Acton, MA 01720

by



Michael DePangher, Ph.D.
Spectrum Petrographics, Inc.

Key to Petrographic and Photomicrographic Descriptions

Clay minerals common in altered rocks must often be identified by X-ray diffraction either because their optic properties are not diagnostic or because they are too fine grained to be reliably identified by optical methods. The term "clay" is used herein to denote fine grained phyllosilicates in general. Under ideal conditions, it is often possible to optically discriminate between 4 major groups: kaolinite, smectite, mica (including illite), and chlorite. This is done whenever conditions permit.

The term "sericite" is applied to fine grained colorless phyllosilicates that show upper 2nd order maximum interference colors. These could include muscovite, illite, paragonite, lepidolite, margarite, clintonite, pyrophyllite, and talc. The term "intermediate clay" is applied to fine grained very pale or colorless phyllosilicates that show upper 1st order maximum interference colors. These are probably dominated by chlorite, smectite, and mixed-layer illite/smectite.

The term "opaques" is used to refer to all materials opaque (and sometimes semi-opaque) to transmitted light. The term "FEOH" is herein used to indicate fine grained, yellowish to reddish brown, earthy materials of varying opacity in transmitted light. FEOH is probably mostly Fe oxy-hydroxides but may sometimes include sphalerite, realgar, orpiment, jarosite, a number of Mn oxy-hydroxides, and organic matter.

A question mark after a rock or mineral name in a petrographic description means that there is uncertainty about the identification of that rock or mineral.

Particle size distributions are given as (A-B μm), where A and B are the median and largest particle sizes, respectively, in microns. A question mark (?) in the position of A or B indicates that the value of A or B was indeterminate, probably because of excessively large or small particle size or statistically insignificant numbers of particles.

Mineral abundances are visual estimates for an entire slide. For multi-lithologic materials (cuttings, etc...), mineralogy, textures, and alteration are described only for the dominant lithology.

Section preparation codes are as follows: (1) Format: 27 x 46 mm, 51 x 76 mm, or 1" round; (2) Finish: standard lapping (STD) or polished (POL); (3) Stains: sodium cobaltinitrite (SCN), alizarin red S (ARS), potassium ferricyanide (PF), and barium chloride + potassium rhodizonate (BCPR); and (4) Cover: none, permanent Loctite acrylic (PLA), or removable Canada Balsam (RCB).

Photomicrograph captions/labels contain the following items of information in consecutive order separated by forward slashes: (1) sample identification; (2) JPG image file name composed of concatenated job identification code + sequence number; (3) illumination type; and (5) field of view (FOV). For illumination types, "PPL" indicates plane-polarized light; "XPL indicates cross-polarized light; "R" indicates reflected light. "550" means that a 550 nanometer wavelength plate was inserted in the light path. "C" indicates that the substage condenser was in (sometimes used for Fe-oxides). "O" indicates substage condenser in an oblique position. These various illuminations can be combined. "CON" indicates conoscopic illumination. POL means that a polarizing filter was used with the lens, and DAY means the sample was photographed in diffused daylight.

Features on photomicrographs are indicated by the number of the feature in the ALTERATION section of the text or by a mineral name abbreviation: **Q**uartz, **P**lagioclase, **K**-feldspar, **ser**icite, **bio**tite, **fe**rroan **cal**cite, **act**inolite.

Igneous rock classifications are according to IUGS (1973; 1979); sandstones are classified according to McBride (1963); mudrocks are classified according to Picard (1971); and carbonates are classified according to Folk (1959).

Hand Specimen Images

B-9 R10 105-115 ft

B-7 R14 145-155 ft



SAMPLE # **B-9 R10 105-115 ft** August 4, 2012

ROCK NAME ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST – probably formed by regional dynamothermal ductile metamorphism and alteration (secondary clay) of an arkose sedimentary protolith.

MINERALS Quartz (20%) + biotite (20%) + K-feldspar (20%) + plagioclase (13%) + sillimanite (11%) + clay (probably kaolinite) (10%) + garnet (5%) + muscovite (1%) + zircon (<1%).

TEXTURES Metamorphic, porphyroblastic. Metamorphism has produced a moderately directed fabric.

Porphyroblasts (5%) are subhedral, whole, isolated, 1800-3200 µm.

Garnet (5%)

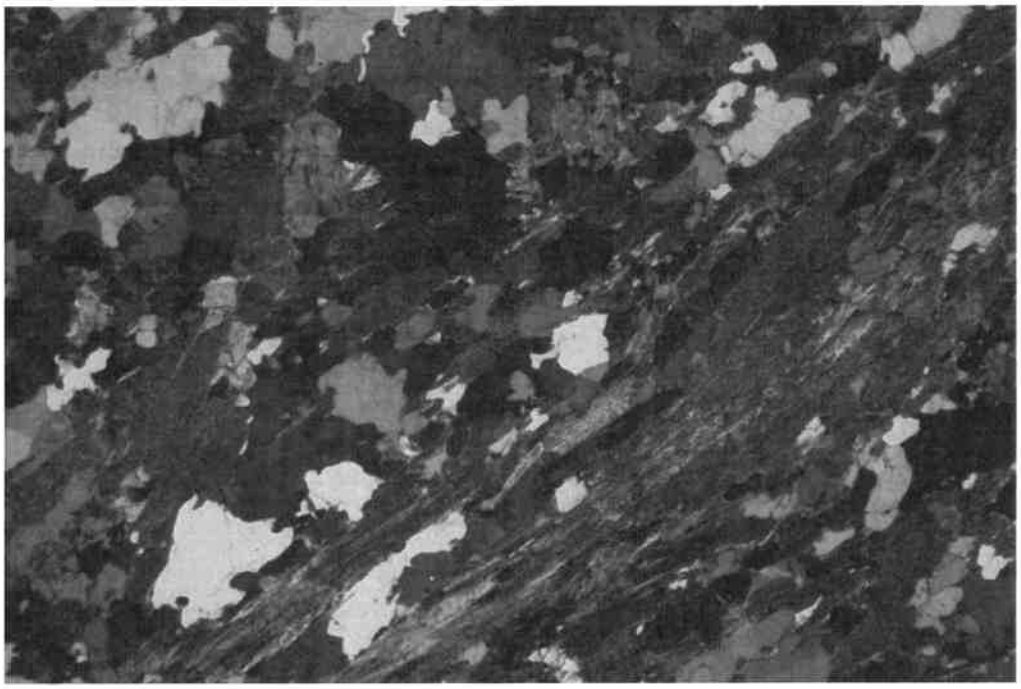
Matrix (95%) is composed of granoblastic [quartz + biotite + K-feldspar + plagioclase + sillimanite]. Grain contacts are straight to sutured.

ALTERATION Alteration features in relative chronological order from oldest to youngest are: (1) regional dynamothermal, ductile, prograde metamorphism in which biotite eventually began to break down to sillimanite; and (2a) sillimanite moderately altered to clay. Alteration features of indeterminate relative ages: (1) plagioclase moderately altered to clay.

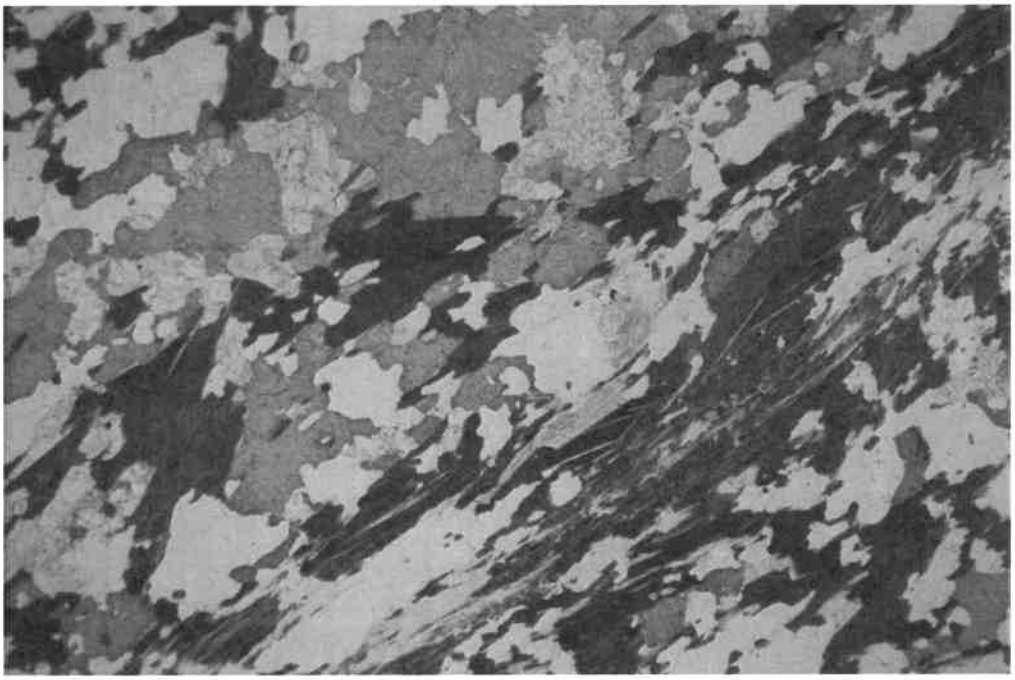
SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top ½) Cover: PLA

IMAGES

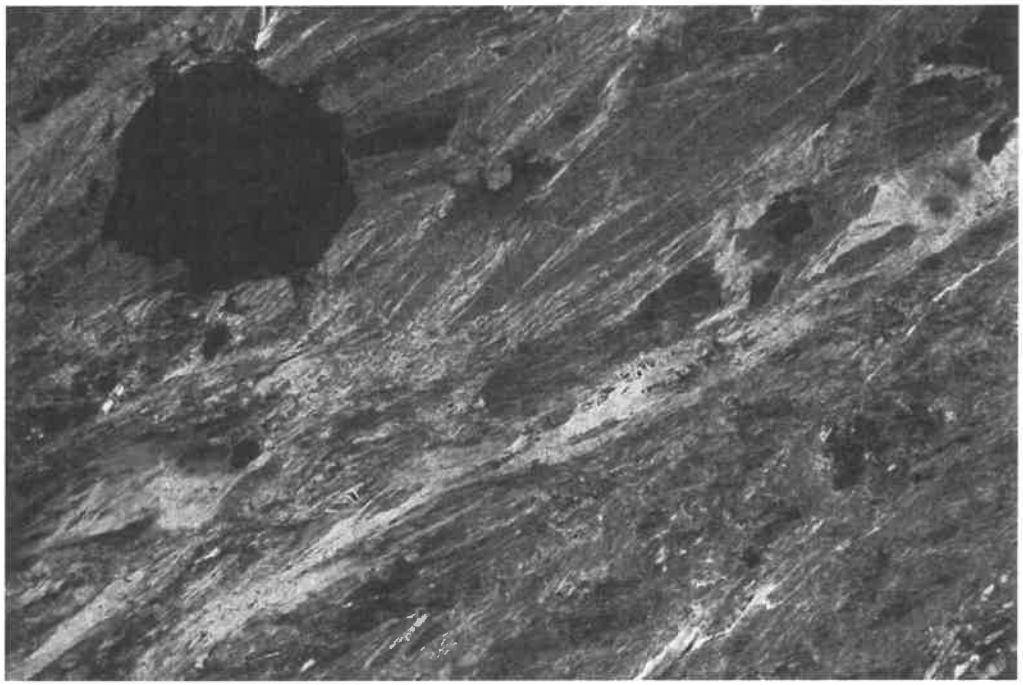
B-9 R10 105-115 ft 3FJ_001.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of granoblastic matrix with biotite weakly altered to sillimanite (same view as 3FJ_002.jpg).



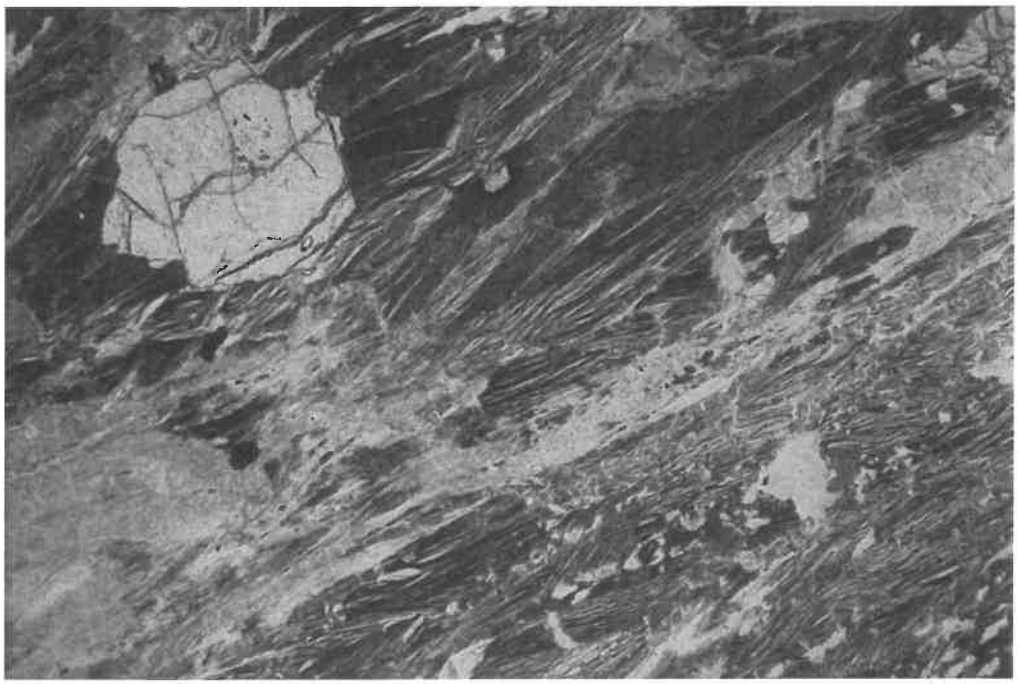
B-9 R10 105-115 ft 3FJ_002.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of granoblastic matrix with biotite weakly altered to sillimanite (same view as 3FJ_001.jpg).



B-9 R10 105-115 ft 3FJ_003.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of a garnet porphyroblast and abundant biotite moderately altered to sillimanite (same view as 3FJ_004.jpg).



B-9 R10 105-115 ft 3FJ_004.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of a garnet porphyroblast and abundant biotite moderately altered to sillimanite (same view as 3FJ_003.jpg).



B-9 R10 105-115 ft 3FJ_005.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of granoblastic matrix with biotite strongly altered to sillimanite (same view as 3FJ_006.jpg).



B-9 R10 105-115 ft 3FJ_006.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of granoblastic matrix with biotite strongly altered to sillimanite (same view as 3FJ_005.jpg).



SAMPLE # **B-7 R14 145-155 ft** August 4, 2012

ROCK NAME ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST – probably formed by regional dynamothermal ductile metamorphism and alteration (secondary clay) of an arkose sedimentary protolith.

MINERALS Quartz (25%) + biotite (25%) + K-feldspar (25%) + plagioclase (12%) + sillimanite (6%) + clay (probably kaolinite) (5%) + garnet (2%) + zircon (<1%) + apatite (<1%).

TEXTURES Metamorphic, porphyroblastic. Metamorphism has produced a moderately directed fabric.

Porphyroblasts (2%) are subhedral, whole, isolated, 1200-3000 µm.

Garnet (2%)

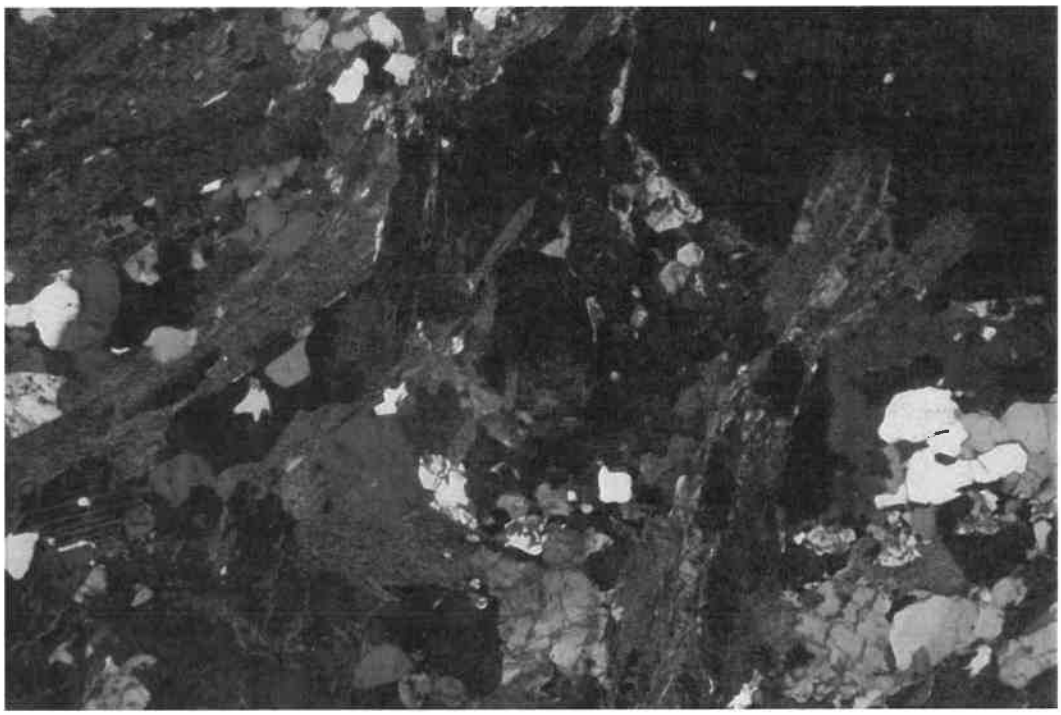
Matrix (95%) is composed of granoblastic [quartz + biotite + K-feldspar + plagioclase + sillimanite]. Grain contacts are straight to sutured.

ALTERATION Alteration features in relative chronological order from oldest to youngest are: (1) regional dynamothermal, ductile, prograde metamorphism in which biotite eventually began to break down to sillimanite; and (2a) sillimanite moderately altered to clay. Alteration features of indeterminate relative ages: (1) plagioclase moderately altered to clay.

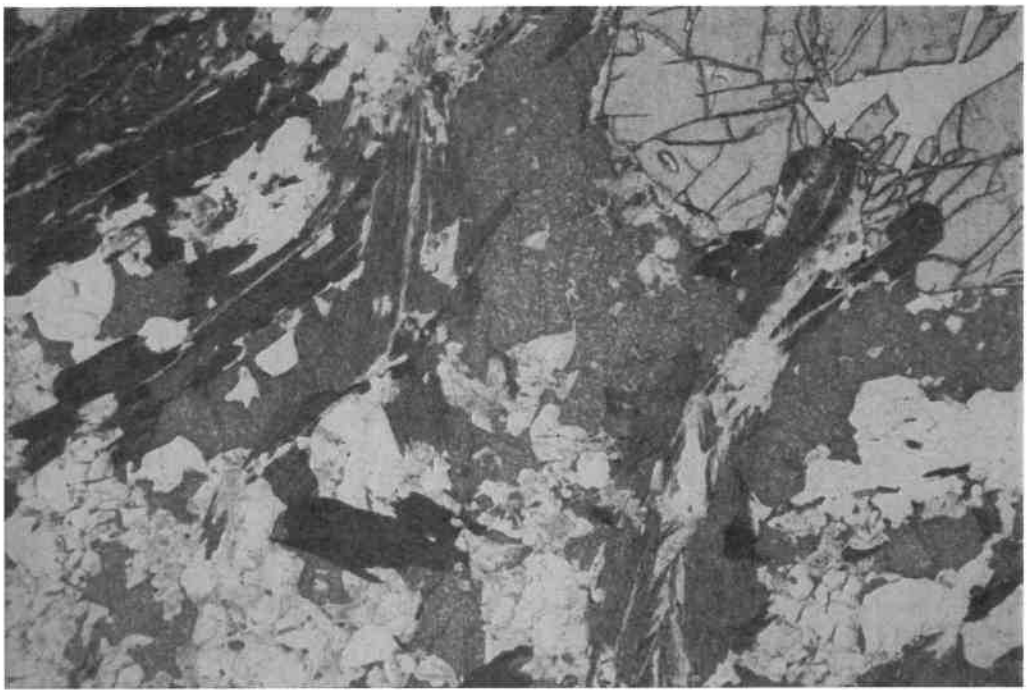
SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top ½) Cover: PLA

IMAGES

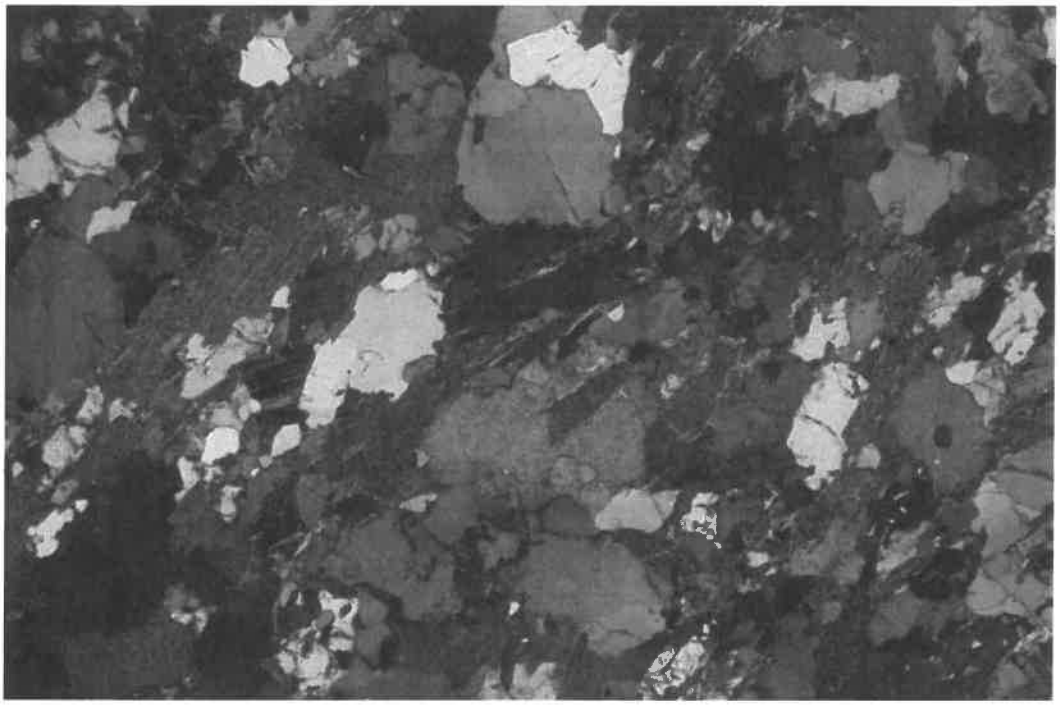
B-7 R14 145-155 ft 3FJ_007.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of a garnet porphyroblast and granoblastic matrix with biotite not altered to sillimanite (same view as 3FJ_008.jpg).



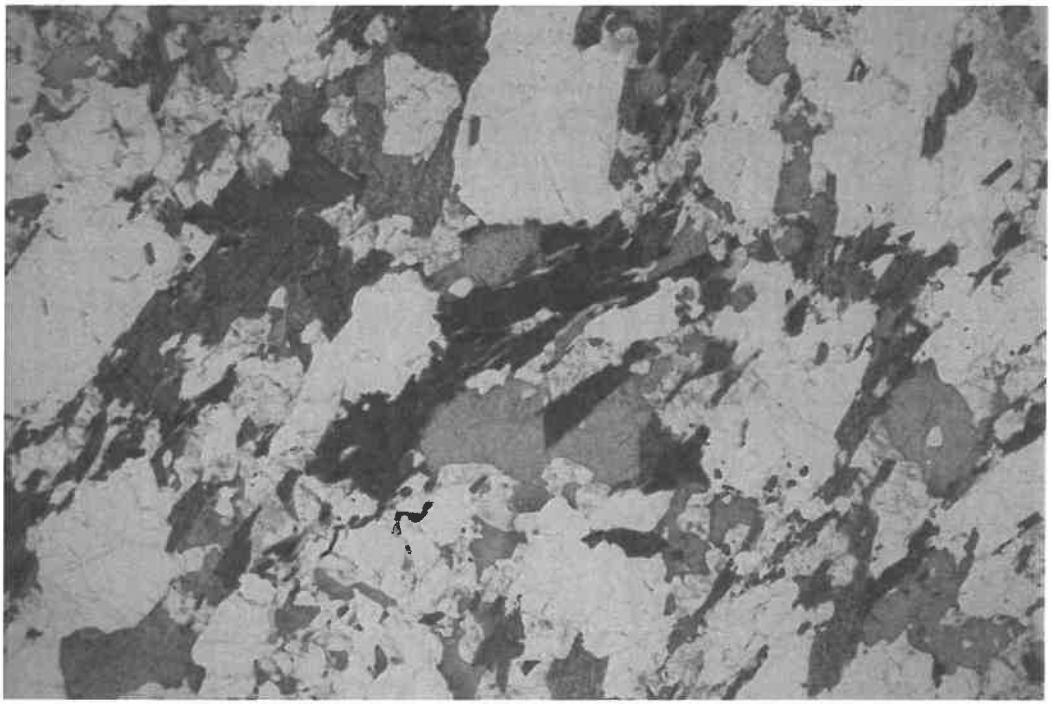
B-7 R14 145-155 ft 3FJ_008.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of a garnet porphyroblast and granoblastic matrix with biotite not altered to sillimanite (same view as 3FJ_007.jpg).



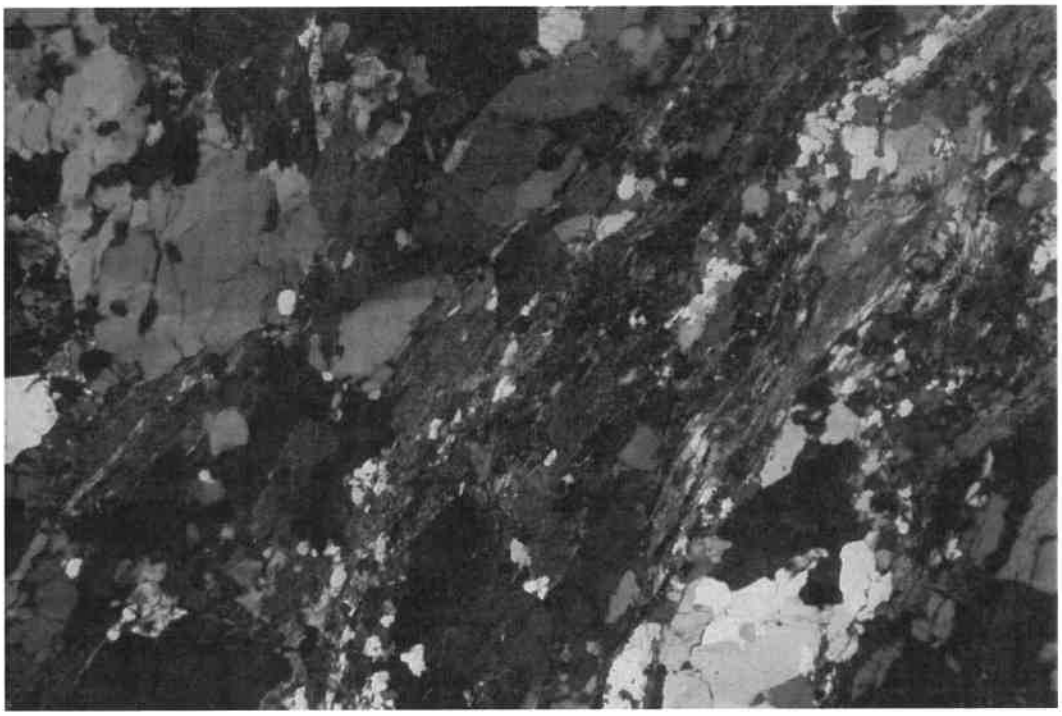
B-7 R14 145-155 ft 3FJ_009.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of granoblastic matrix with biotite not altered to sillimanite (same view as 3FJ_010.jpg).



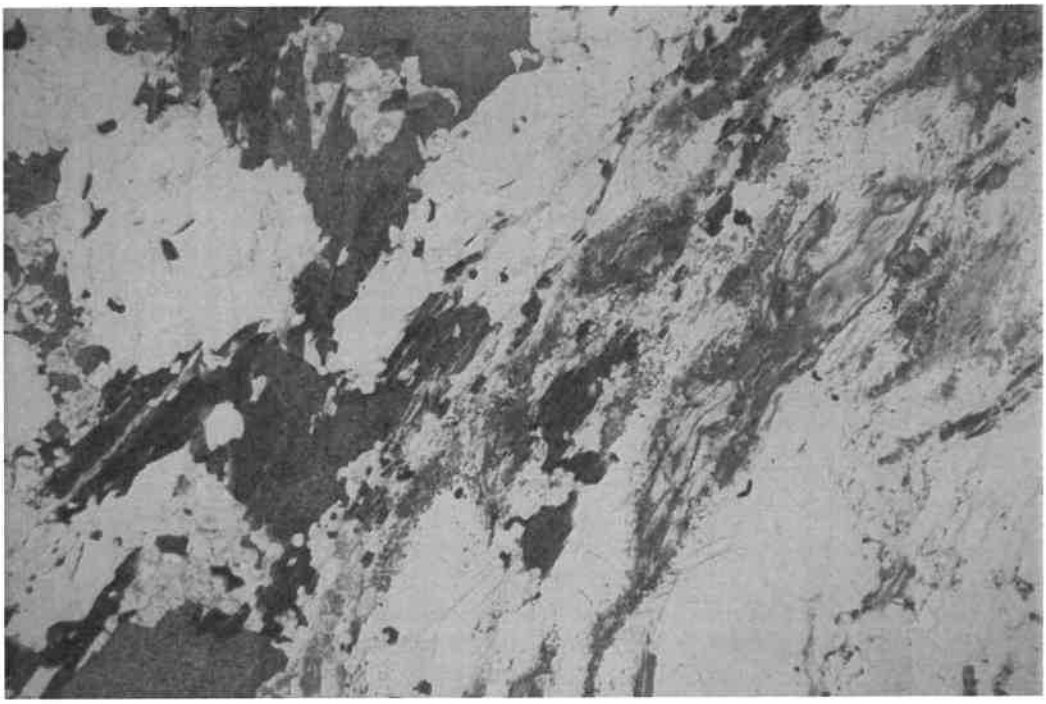
B-7 R14 145-155 ft 3FJ_010.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of granoblastic matrix with biotite not altered to sillimanite (same view as 3FJ_009.jpg).



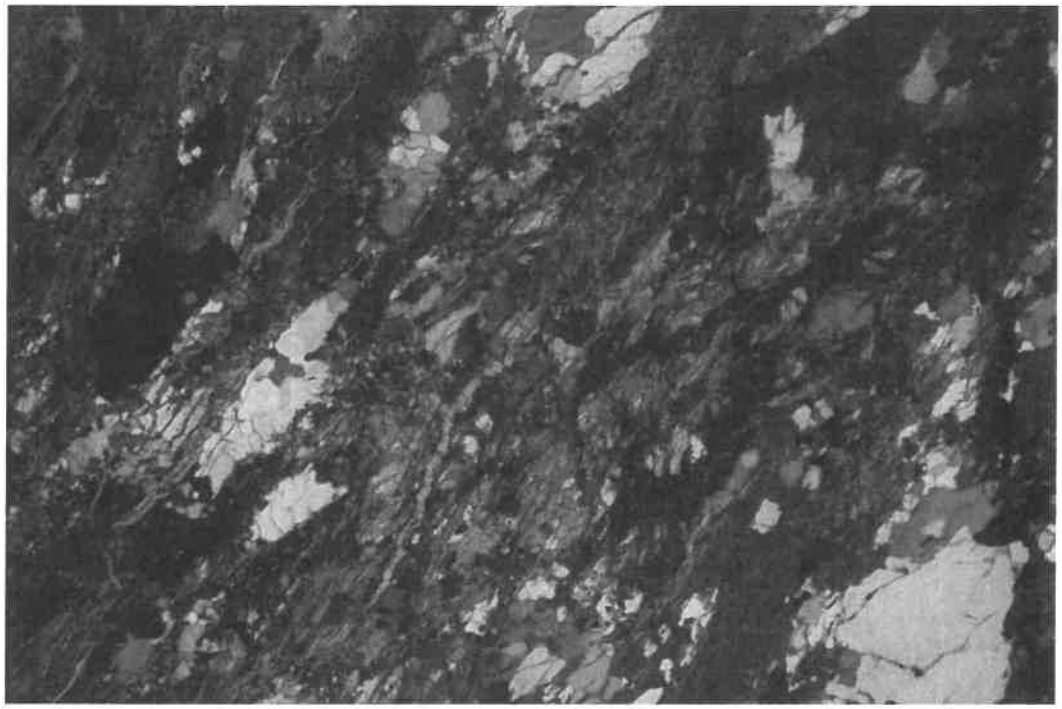
B-7 R14 145-155 ft 3FJ_011.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of granoblastic matrix with biotite moderately altered to sillimanite (same view as 3FJ_012.jpg).



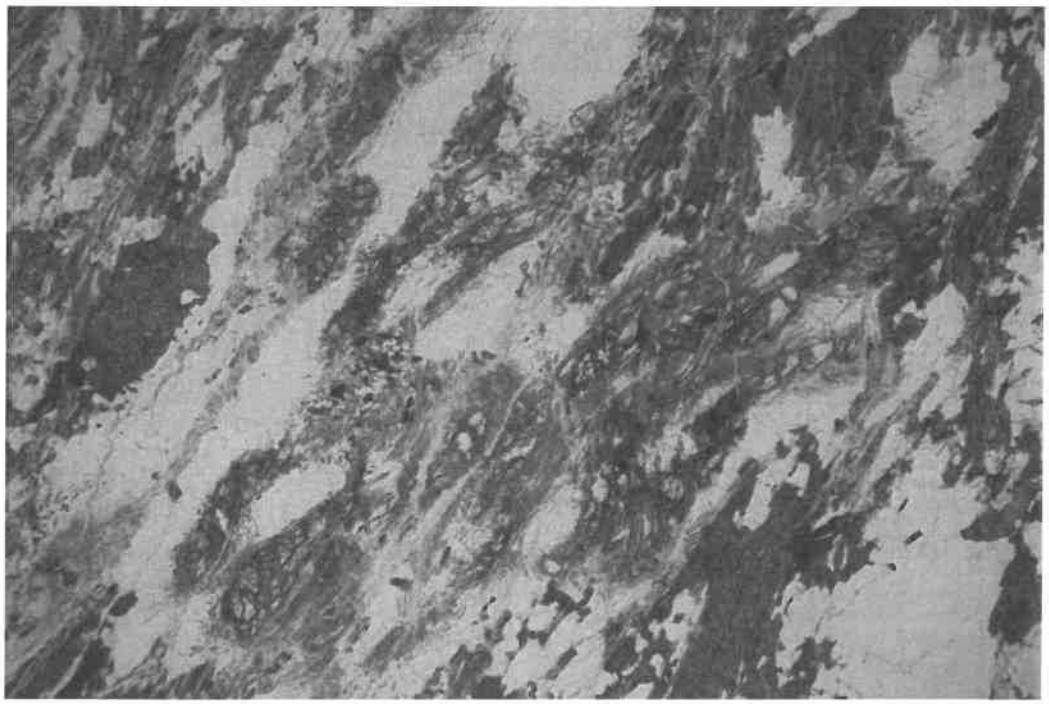
B-7 R14 145-155 ft 3FJ_012.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of granoblastic matrix with biotite moderately altered to sillimanite (same view as 3FJ_011.jpg).



B-7 R14 145-155 ft 3FJ_013.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of granoblastic matrix with biotite strongly altered to sillimanite (same view as 3FJ_014.jpg).



B-7 R14 145-155 ft 3FJ_014.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED SILLIMANITE-PLAGIOCLASE-KFELDSPAR-BIOTITE-QUARTZ SCHIST showing typical appearance of granoblastic matrix with biotite strongly altered to sillimanite (same view as 3FJ_013.jpg).



New 20" Sub Aqueous Water Main

GTX Project No. 11987072312

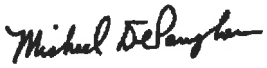
Petrographic Report #3FU

August 24, 2012

for

Mark Dobday
GeoTesting Express, Inc.
125 Nagog Park
Acton, MA 01720

by



Michael DePangher, Ph.D.
Spectrum Petrographics, Inc.

Key to Petrographic and Photomicrographic Descriptions

Clay minerals common in altered rocks must often be identified by X-ray diffraction either because their optic properties are not diagnostic or because they are too fine grained to be reliably identified by optical methods. The term "clay" is used herein to denote fine grained phyllosilicates in general. Under ideal conditions, it is often possible to optically discriminate between 4 major groups: kaolinite, smectite, mica (including illite), and chlorite. This is done whenever conditions permit.

The term "sericite" is applied to fine grained colorless phyllosilicates that show upper 2nd order maximum interference colors. These could include muscovite, illite, paragonite, lepidolite, margarite, clintonite, pyrophyllite, and talc. The term "intermediate clay" is applied to fine grained very pale or colorless phyllosilicates that show upper 1st order maximum interference colors. These are probably dominated by chlorite, smectite, and mixed-layer illite/smectite.

The term "opaques" is used to refer to all materials opaque (and sometimes semi-opaque) to transmitted light. The term "FEOH" is herein used to indicate fine grained, yellowish to reddish brown, earthy materials of varying opacity in transmitted light. FEOH is probably mostly Fe oxy-hydroxides but may sometimes include sphalerite, realgar, orpiment, jarosite, a number of Mn oxy-hydroxides, and organic matter.

A question mark after a rock or mineral name in a petrographic description means that there is uncertainty about the identification of that rock or mineral.

Particle size distributions are given as (A-B μm), where A and B are the median and largest particle sizes, respectively, in microns. A question mark (?) in the position of A or B indicates that the value of A or B was indeterminate, probably because of excessively large or small particle size or statistically insignificant numbers of particles.

Mineral abundances are visual estimates for an entire slide. For multi-lithologic materials (cuttings, etc...), mineralogy, textures, and alteration are described only for the dominant lithology.

Section preparation codes are as follows: (1) Format: 27 x 46 mm, 51 x 76 mm, or 1" round; (2) Finish: standard lapping (STD) or polished (POL); (3) Stains: sodium cobaltinitrite (SCN), alizarin red S (ARS), potassium ferricyanide (PF), and barium chloride + potassium rhodizonate (BCPR); and (4) Cover: none, permanent Loctite acrylic (PLA), or removable Canada Balsam (RCB).

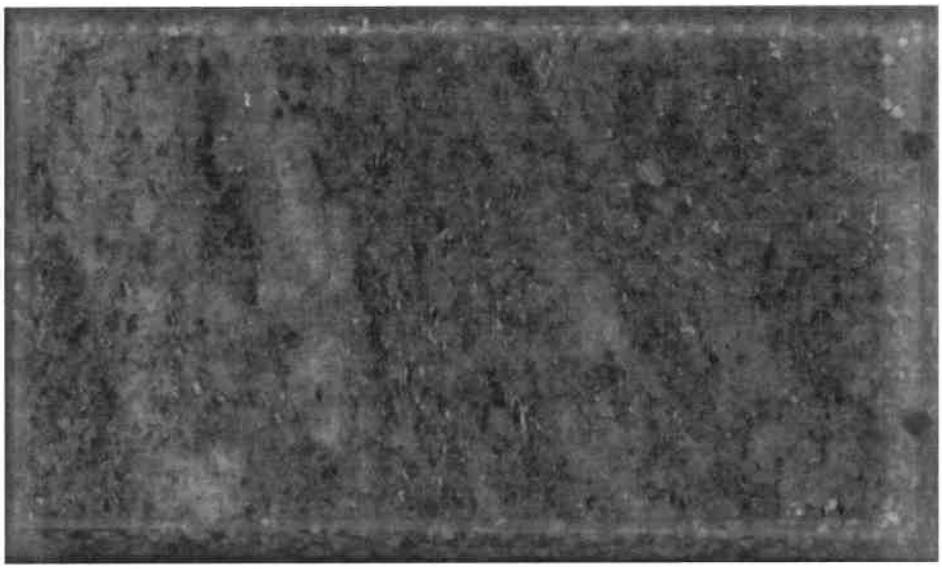
Photomicrograph captions/labels contain the following items of information in consecutive order separated by forward slashes: (1) sample identification; (2) JPG image file name composed of concatenated job identification code + sequence number; (3) illumination type; and (5) field of view (FOV). For illumination types, "PPL" indicates plane-polarized light; "XPL indicates cross-polarized light; "R" indicates reflected light. "550" means that a 550 nanometer wavelength plate was inserted in the light path. "C" indicates that the substage condenser was in (sometimes used for Fe-oxides). "O" indicates substage condenser in an oblique position. These various illuminations can be combined. "CON" indicates conoscopic illumination. POL means that a polarizing filter was used with the lens, and DAY means the sample was photographed in diffused daylight.

Features on photomicrographs are indicated by the number of the feature in the ALTERATION section of the text or by a mineral name abbreviation: **Q**uartz, **P**lagioclase, **K**-feldspar, **ser**icite, **bio**tite, **fe**rroan **cal**cite, **act**inolite.

Igneous rock classifications are according to IUGS (1973; 1979); sandstones are classified according to McBride (1963); mudrocks are classified according to Picard (1971); and carbonates are classified according to Folk (1959).

Hand Specimen Images

B-6 R14 145-155



SAMPLE # **B-6 R14 145-155** August 24, 2012

ROCK NAME BIOTITE-PLAGIOCLASE-QUARTZ SCHIST – probably formed by regional dynamo-thermal ductile metamorphism and alteration (secondary opaques + muscovite + carbonate) of an arkose sedimentary protolith.

MINERALS Quartz (40%) + plagioclase (33%) + biotite (20%) + opaques (5%) + garnet (1%) + muscovite (1%) + carbonate (<1%) + zircon (<1%) + apatite (<1%).

TEXTURES Metamorphic, granoblastic. Oriented biotite defines a weakly directed fabric.

Porphyroblasts (0%) were not observed.

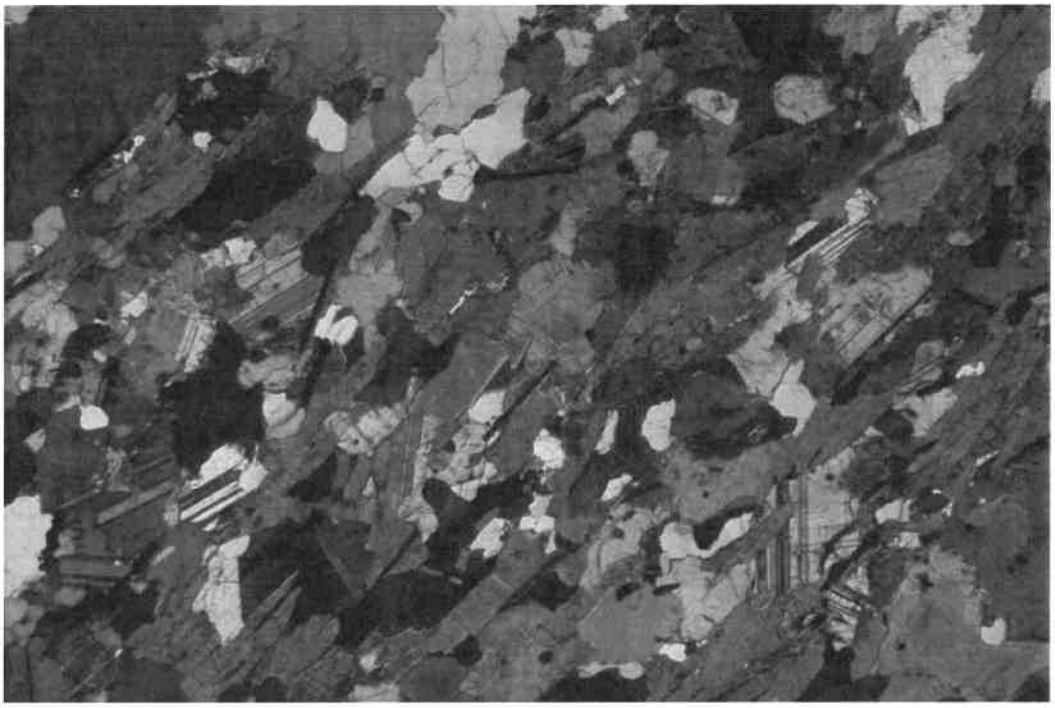
Matrix (100%) is composed of 400-3600 µm, granoblastic [quartz + [plagioclase weakly altered to muscovite + carbonate] + [biotite weakly altered to opaques + muscovite]. Grain contacts are straight to sutured.

ALTERATION Alteration features in relative chronological order from oldest to youngest are: (1) regional dynamothermal, ductile, prograde metamorphism.

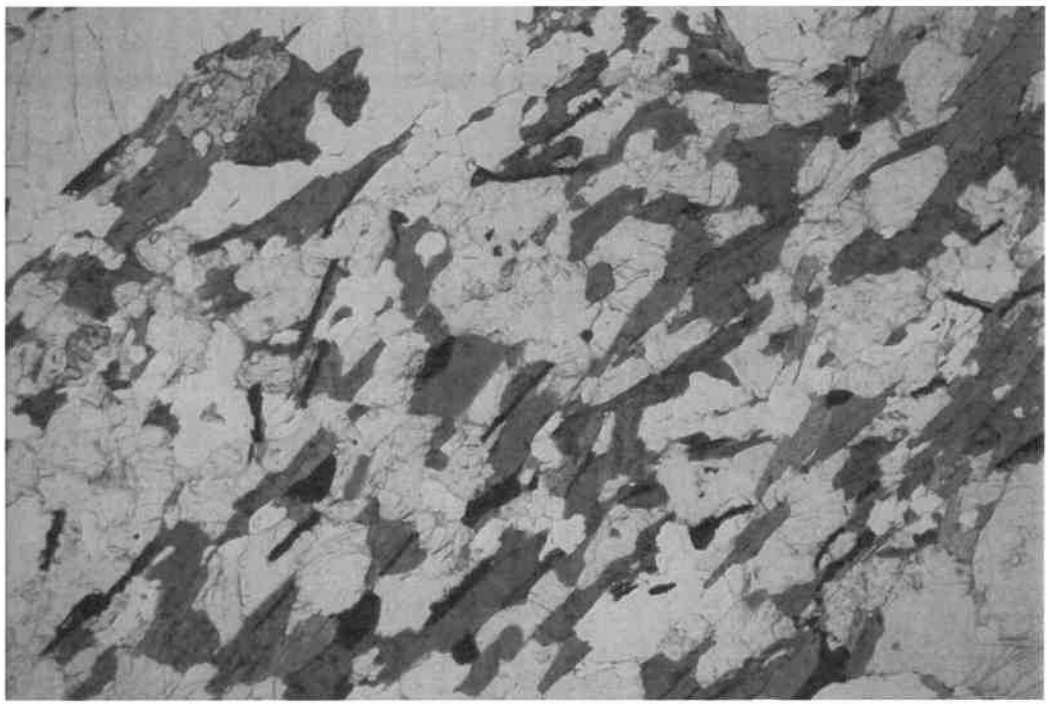
SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top ½) Cover: PLA

IMAGES

B-6 R14 145-155 3FU_001.jpg/XPL/FOV = 4.00 x 5.83 mm BIOTITE-PLAGIOCLASE-QUARTZ SCHIST showing typical appearance (same view as 3FU_002.jpg).



B-6 R14 145-155 3FU_002.jpg/PPL/FOV = 4.00 x 5.83 mm BIOTITE-PLAGIOCLASE-QUARTZ SCHIST showing typical appearance (same view as 3FU_001.jpg).



New 20" Sub Aqueous Water Main

GTX Project No. 11987

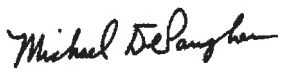
Petrographic Report #3KQ

October 2, 2012

for

Mark Dobday
GeoTesting Express, Inc.
125 Nagog Park
Acton, MA 01720

by



Michael DePangher, Ph.D.
Spectrum Petrographics, Inc.

Key to Petrographic and Photomicrographic Descriptions

Clay minerals common in altered rocks must often be identified by X-ray diffraction either because their optic properties are not diagnostic or because they are too fine grained to be reliably identified by optical methods. The term "clay" is used herein to denote fine grained phyllosilicates in general. Under ideal conditions, it is often possible to optically discriminate between 4 major groups: kaolinite, smectite, mica (including illite), and chlorite. This is done whenever conditions permit.

The term "sericite" is applied to fine grained colorless phyllosilicates that show upper 2nd order maximum interference colors. These could include muscovite, illite, paragonite, lepidolite, margarite, clintonite, pyrophyllite, and talc. The term "intermediate clay" is applied to fine grained very pale or colorless phyllosilicates that show upper 1st order maximum interference colors. These are probably dominated by chlorite, smectite, and mixed-layer illite/smectite.

The term "opaques" is used to refer to all materials opaque (and sometimes semi-opaque) to transmitted light. The term "FEOH" is herein used to indicate fine grained, yellowish to reddish brown, earthy materials of varying opacity in transmitted light. FEOH is probably mostly Fe oxy-hydroxides but may sometimes include sphalerite, realgar, orpiment, jarosite, a number of Mn oxy-hydroxides, and organic matter.

A question mark after a rock or mineral name in a petrographic description means that there is uncertainty about the identification of that rock or mineral.

Particle size distributions are given as (A-B µm), where A and B are the median and largest particle sizes, respectively, in microns. A question mark (?) in the position of A or B indicates that the value of A or B was indeterminate, probably because of excessively large or small particle size or statistically insignificant numbers of particles.

Mineral abundances are visual estimates for an entire slide. For multi-lithologic materials (cuttings, etc...), mineralogy, textures, and alteration are described only for the dominant lithology.

Section preparation codes are as follows: (1) Format: 27 x 46 mm, 51 x 76 mm, or 1" round; (2) Finish: standard lapping (STD) or polished (POL); (3) Stains: sodium cobaltinitrite (SCN), alizarin red S (ARS), potassium ferricyanide (PF), and barium chloride + potassium rhodizonate (BCPR); and (4) Cover: none, permanent Loctite acrylic (PLA), or removable Canada Balsam (RCB).

Photomicrograph captions/labels contain the following items of information in consecutive order separated by forward slashes: (1) sample identification; (2) JPG image file name composed of concatenated job identification code + sequence number; (3) illumination type; and (5) field of view (FOV). For illumination types, "PPL" indicates plane-polarized light; "XPL indicates cross-polarized light; "R" indicates reflected light. "550" means that a 550 nanometer wavelength plate was inserted in the light path. "C" indicates that the substage condenser was in (sometimes used for Fe-oxides). "O" indicates substage condenser in an oblique position. These various illuminations can be combined. "CON" indicates conoscopic illumination. POL means that a polarizing filter was used with the lens, and DAY means the sample was photographed in diffused daylight.

Features on photomicrographs are indicated by the number of the feature in the ALTERATION section of the text or by a mineral name abbreviation: **Q**uartz, **P**lagioclase, **K**-feldspar, **ser**icite, **bio**tite, **fe**rroan **calc**ite, **act**inolite.

Igneous rock classifications are according to IUGS (1973; 1979); sandstones are classified according to McBride (1963); mudrocks are classified according to Picard (1971); and carbonates are classified according to Folk (1959).

Hand Specimen Images

B-3 R11 100-110

B-2 R5 55-56

B-5 R16 160-170



SAMPLE # **B-3 R11 100-110** October 2, 2012

ROCK NAME ALTERED BIOTITE-PLAGIOCLASE-KFELDSPAR-QUARTZ SCHIST – probably formed by regional dynamothermal ductile metamorphism and alteration (secondary muscovite + opaques) of an arkose sedimentary protolith.

MINERALS Quartz (30%) + K-feldspar (30%) + plagioclase (15%) + biotite (15%) + garnet (4%) + muscovite (2%) + opaques (2%) + kyanite (1%) + sillimanite (1%) + zircon (<1%).

TEXTURES Metamorphic, granoblastic. Metamorphism has produced a moderately directed fabric.

Porphyroblasts (0%) were not observed.

Matrix (100%) is composed of granoblastic [quartz + K-feldspar + plagioclase + biotite + garnet + muscovite + opaques + kyanite + sillimanite + zircon]. Grain contacts are straight to sutured. Minor myrmekite occurs locally within plagioclase.

ALTERATION Alteration features in relative chronological order from oldest to youngest are: (1) regional dynamothermal, ductile, prograde metamorphism up to PT conditions in which kyanite and sillimanite coexist in equilibrium; and (2) veinlets of opaques.

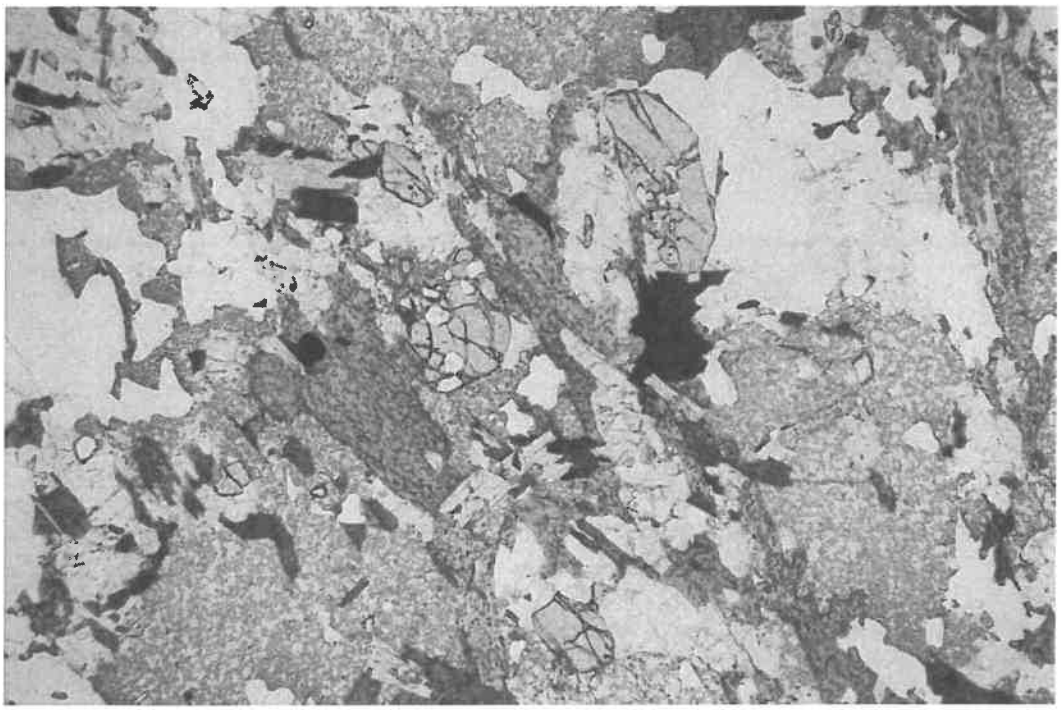
SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top ½) Cover: PLA

IMAGES

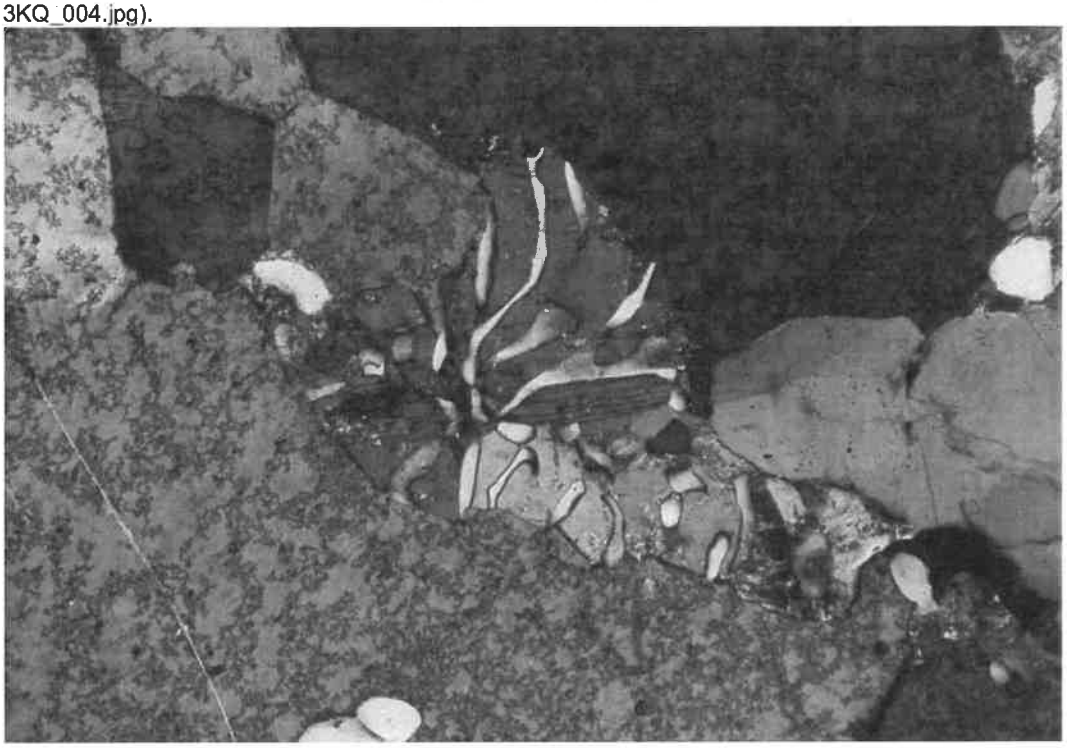
B-3 R11 100-110 3KQ_001.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED BIOTITE-PLAGIOCLASE-KFELDSPAR-QUARTZ SCHIST showing typical appearance (same view as 3KQ_002.jpg).



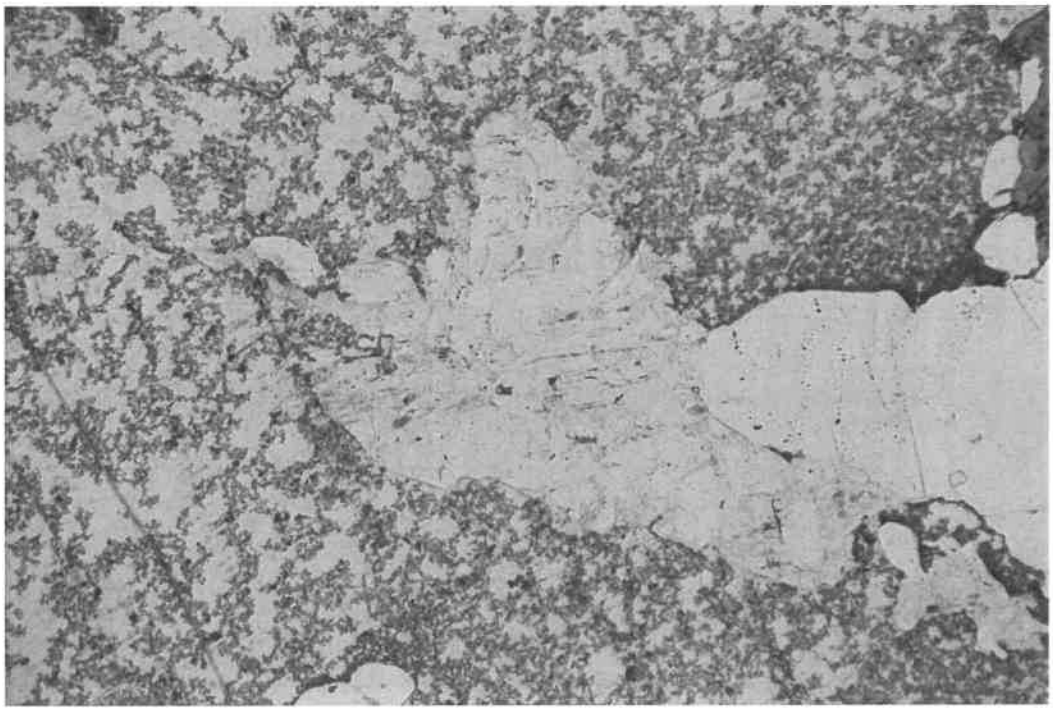
B-3 R11 100-110 3KQ_002.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED BIOTITE-PLAGIOCLASE-KFELDSPAR-QUARTZ SCHIST showing typical appearance (same view as 3KQ_001.jpg).



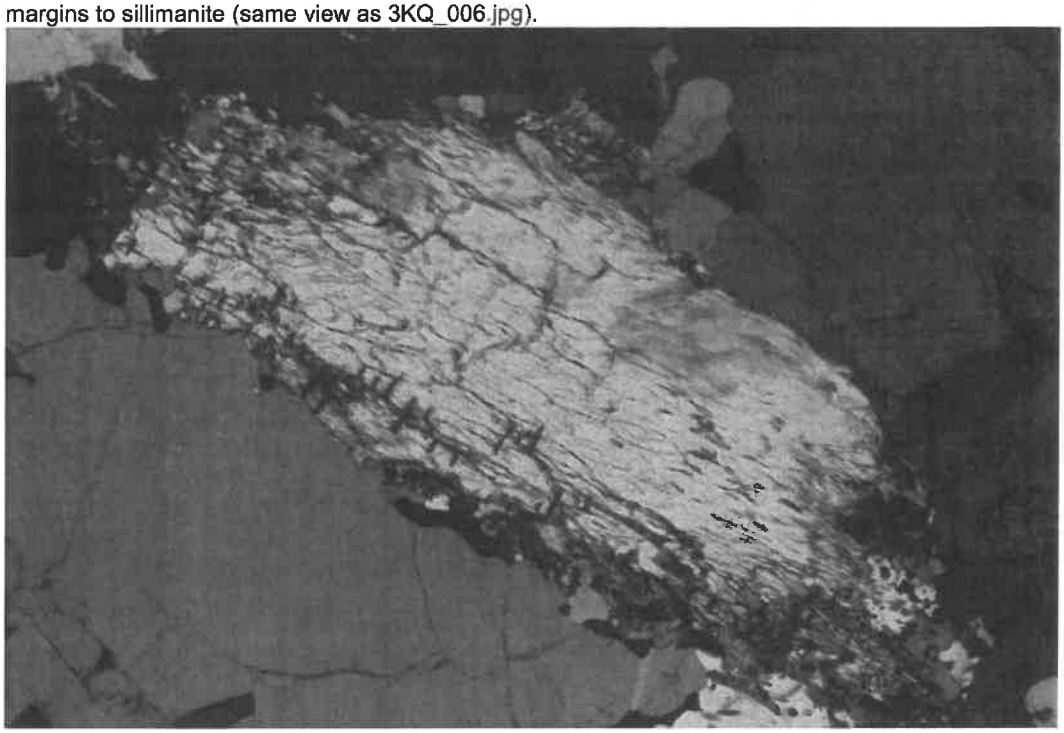
B-3 R11 100-110 3KQ_003.jpg/XPL/FOV = 0.96 x 1.40 mm ALTERED BIOTITE-PLAGIOCLASE-KFELDSPAR-QUARTZ SCHIST showing typical closeup appearance of myrmekite (same view as 3KQ_004.jpg).



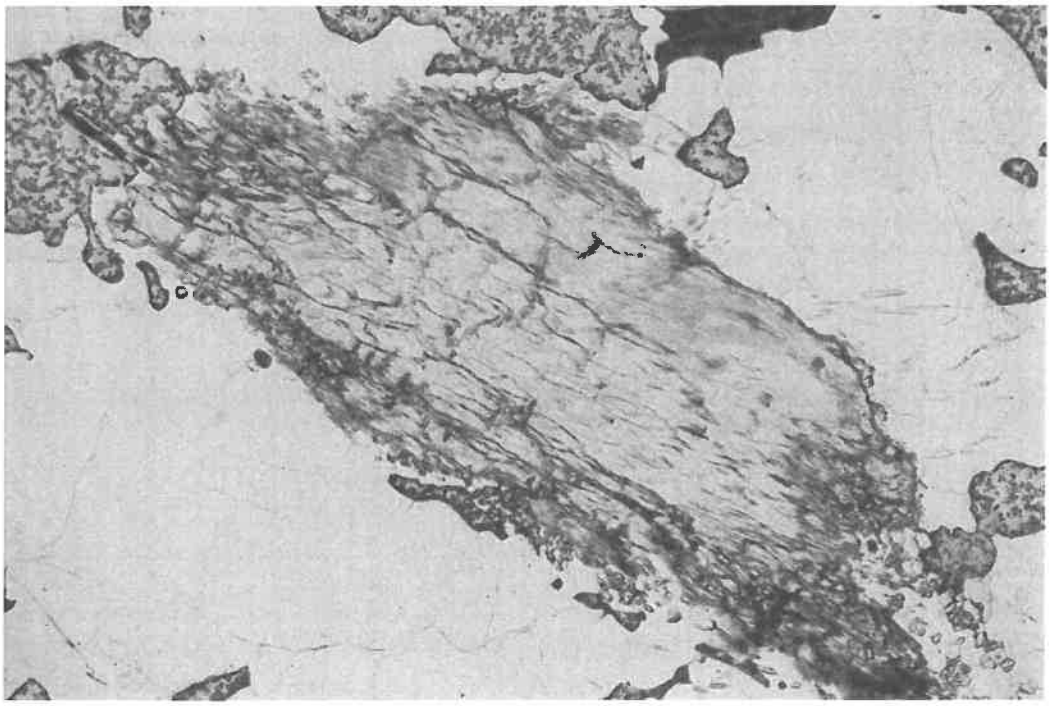
B-3 R11 100-110 3KQ_004.jpg/PPL/FOV = 0.96 x 1.40 mm ALTERED BIOTITE-PLAGIOCLASE-KFELDSPAR-QUARTZ SCHIST showing typical closeup appearance of myrmekite (same view as 3KQ_003.jpg).



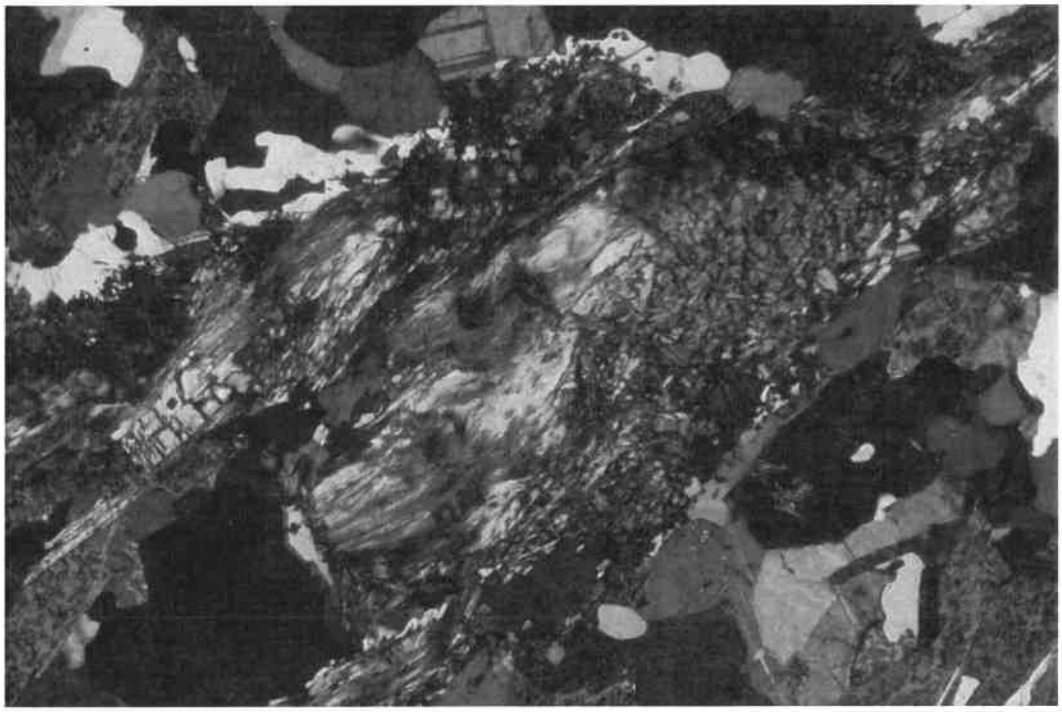
B-3 R11 100-110 3KQ_005.jpg/XPL/FOV = 1.85 x 2.69 mm ALTERED BIOTITE-PLAGIOCLASE-KFELDSPAR-QUARTZ SCHIST showing typical closeup appearance of kyanite weakly altered around its margins to sillimanite (same view as 3KQ_006.jpg).



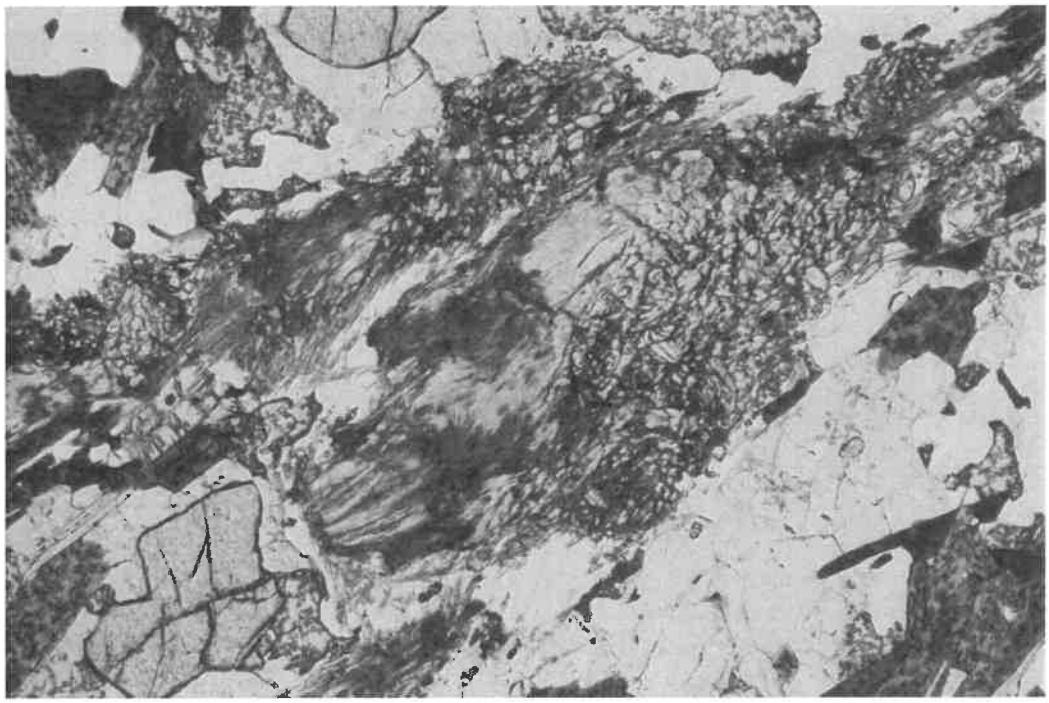
B-3 R11 100-110 3KQ_006.jpg/PPL/FOV = 1.85 x 2.69 mm ALTERED BIOTITE-PLAGIOCLASE-KFELDSPAR-QUARTZ SCHIST showing typical closeup appearance of kyanite weakly altered around its margins to sillimanite (same view as 3KQ_005.jpg).



B-3 R11 100-110 3KQ_007.jpg/XPL/FOV = 1.85 x 2.69 mm ALTERED BIOTITE-PLAGIOCLASE-KFELDSPAR-QUARTZ SCHIST showing typical closeup appearance of kyanite moderately altered to sillimanite (same view as 3KQ_008.jpg).



B-3 R11 100-110 3KQ_008.jpg/PPL/FOV = 1.85 x 2.69 mm ALTERED BIOTITE-PLAGIOCLASE-KFELDSPAR-QUARTZ SCHIST showing typical closeup appearance of kyanite moderately altered to sillimanite (same view as 3KQ_007.jpg).



SAMPLE # **B-2 R5 55-56** October 2, 2012

ROCK NAME ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST – probably formed by regional dynamothermal ductile metamorphism and alteration (secondary muscovite + opaques) of an arkose sedimentary protolith.

MINERALS Quartz (37%) + biotite (15%) + plagioclase (10%) + sillimanite (10%) + opaques (10%) + muscovite (8%) + K-feldspar (5%) + garnet (4%) + kyanite (1%) + zircon (<1%).

TEXTURES Metamorphic, porphyroblastic. Metamorphism has produced a weakly directed fabric.

Porphyroblasts (4%)

Garnet (4%) a single porphyroblast 4400 µm in diameter was observed.

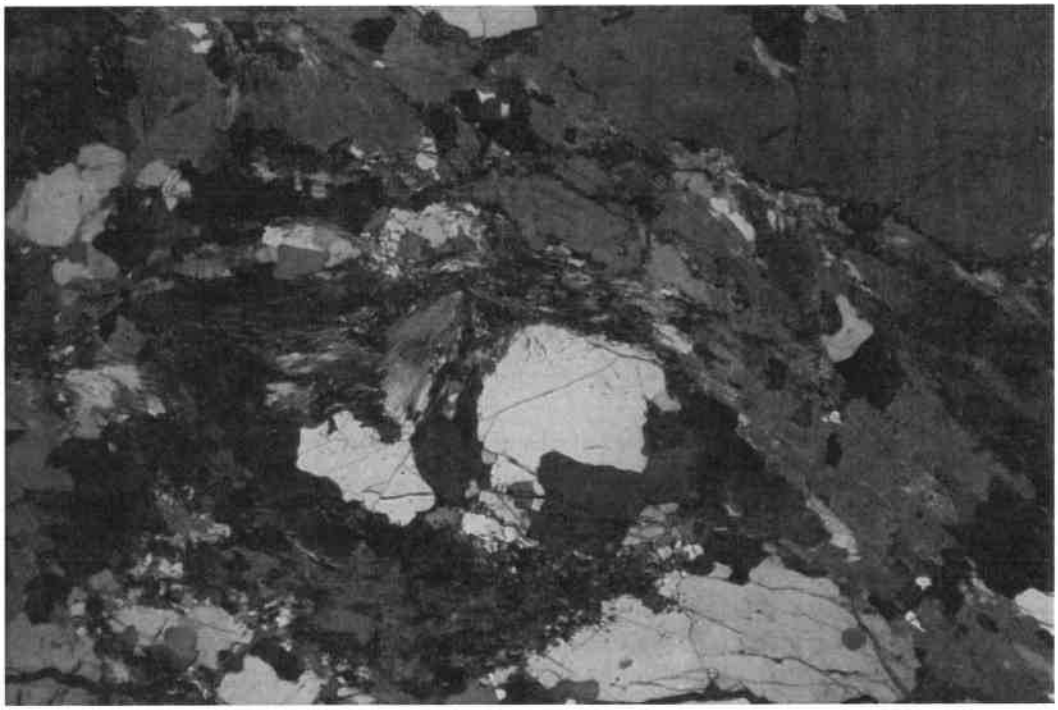
Matrix (96%) is composed of granoblastic [quartz + biotite + plagioclase + sillimanite + opaques + muscovite + K-feldspar + kyanite + zircon]. Grain contacts are straight to sutured.

ALTERATION Alteration features in relative chronological order from oldest to youngest are: (1) regional dynamothermal, ductile, prograde metamorphism; and (2) veinlets of opaques. Alteration features of indeterminate relative ages: (1) plagioclase moderately altered to muscovite; (2) biotite moderately altered to sillimanite; and (3) kyanite strongly altered to muscovite.

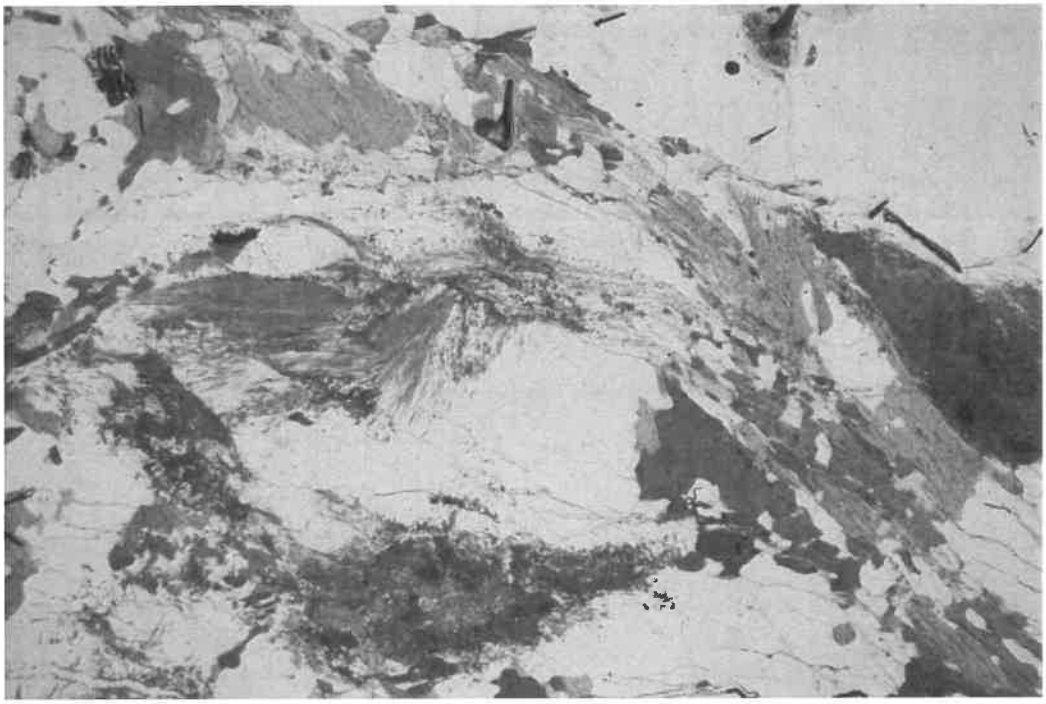
SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top ½) Cover: PLA

IMAGES

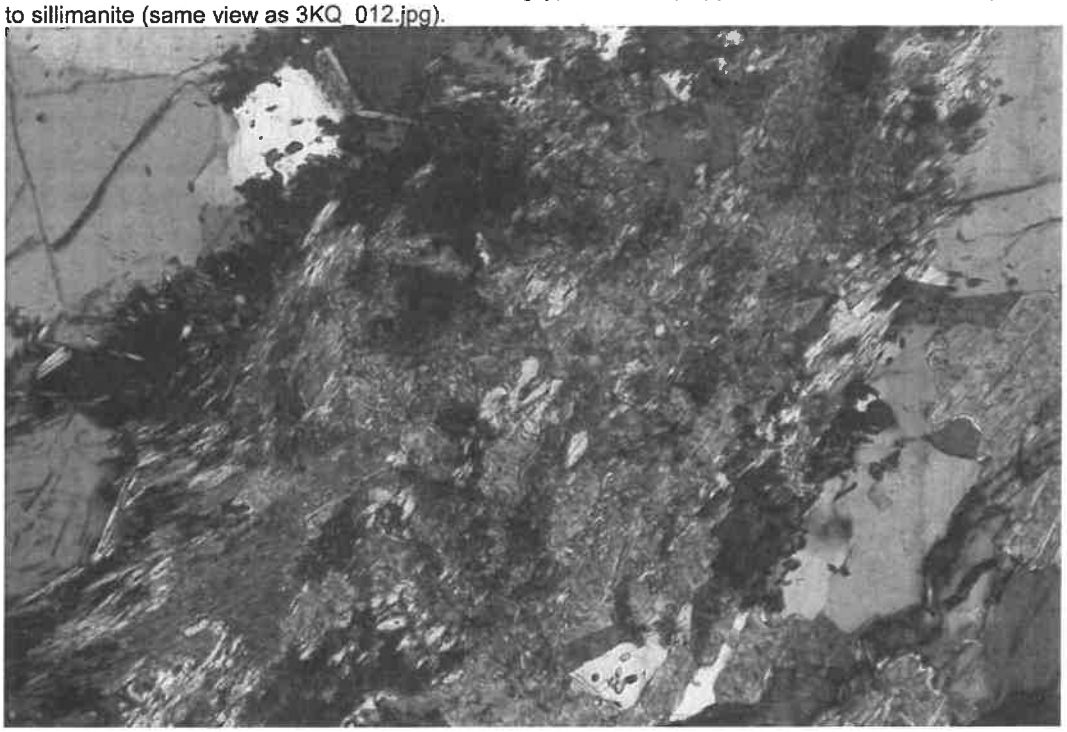
B-2 R5 55-56 3KQ_009.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED BIOTITE-PLAGIOCLASE-KFELDSPAR-QUARTZ SCHIST showing typical appearance with biotite moderately altered to sillimanite (same view as 3KQ_010.jpg).



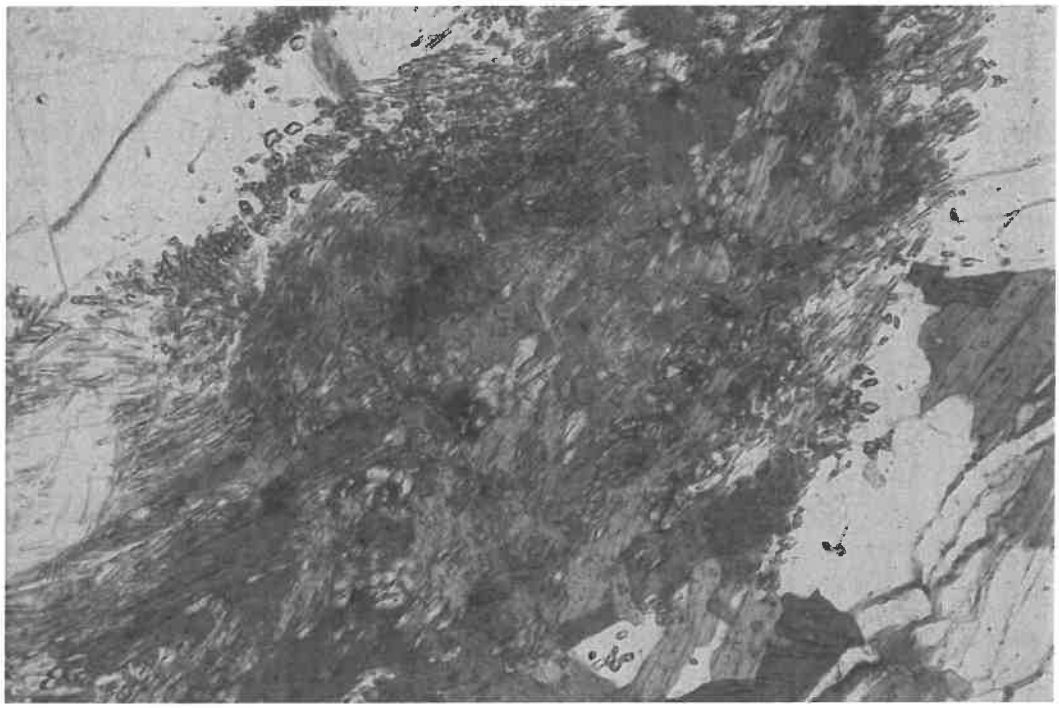
B-2 R5 55-56 3KQ_010.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST showing typical appearance with biotite moderately altered to sillimanite (same view as 3KQ_009.jpg).



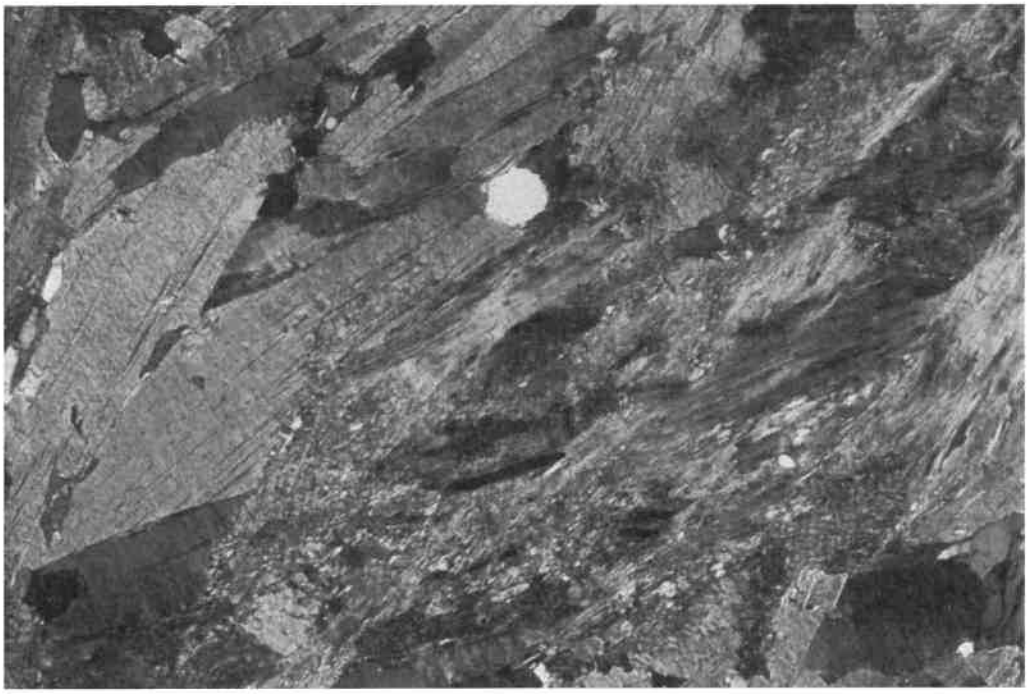
B-2 R5 55-56 3KQ_011.jpg/XPL/FOV = 0.96 x 1.40 mm ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST showing typical closeup appearance biotite moderately altered to sillimanite (same view as 3KQ_012.jpg).



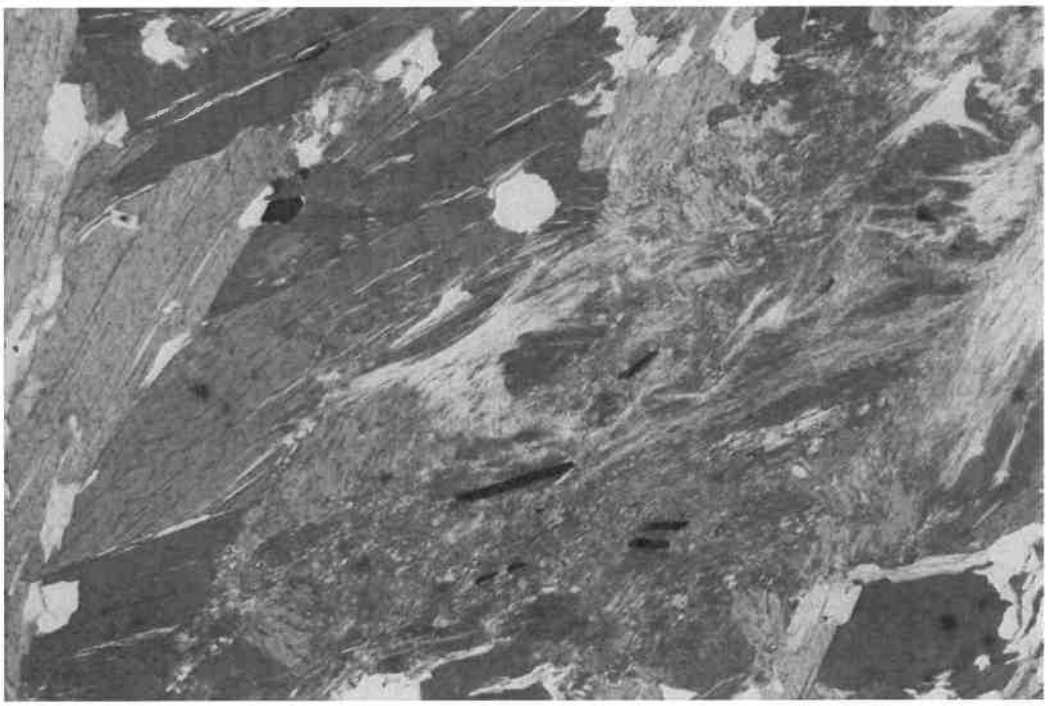
B-2 R5 55-56 3KQ_012.jpg/PPL/FOV = 0.96 x 1.40 mm ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST showing typical closeup appearance of biotite moderately altered to sillimanite (same view as 3KQ_011.jpg).



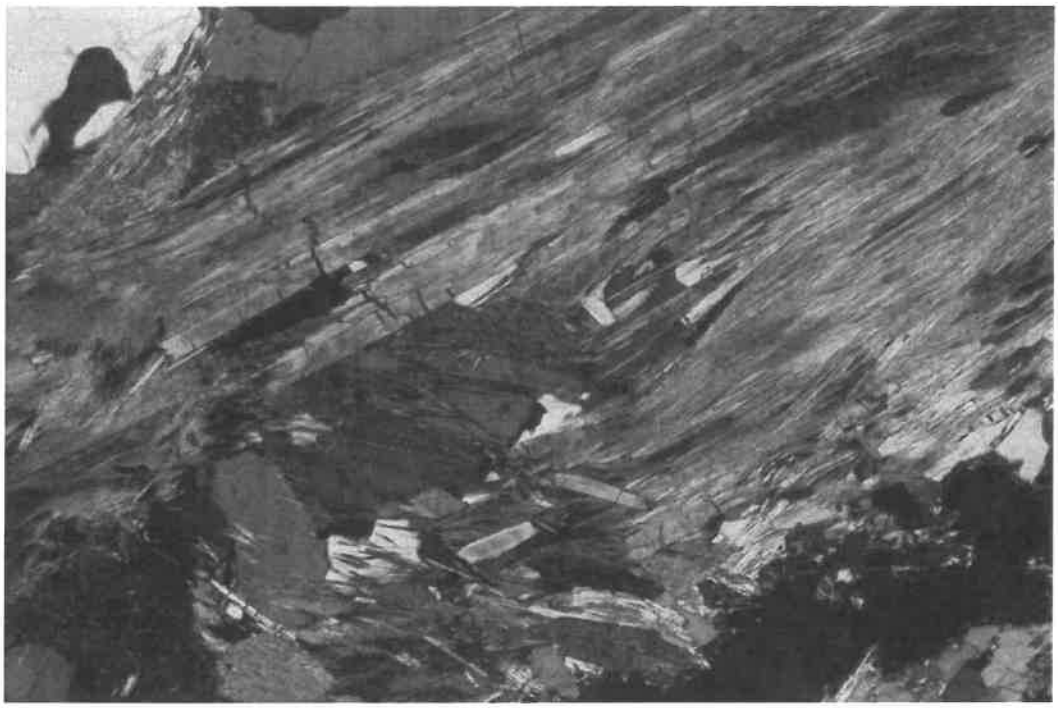
B-2 R5 55-56 3KQ_013.jpg/XPL/FOV = 1.85 x 2.69 mm ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST showing typical closeup appearance of biotite moderately altered to sillimanite (same view as 3KQ_014.jpg).



B-2 R5 55-56 3KQ_014.jpg/PPL/FOV = 1.85 x 2.69 mm ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST showing typical closeup appearance of biotite moderately altered to sillimanite (same view as 3KQ_013.jpg).



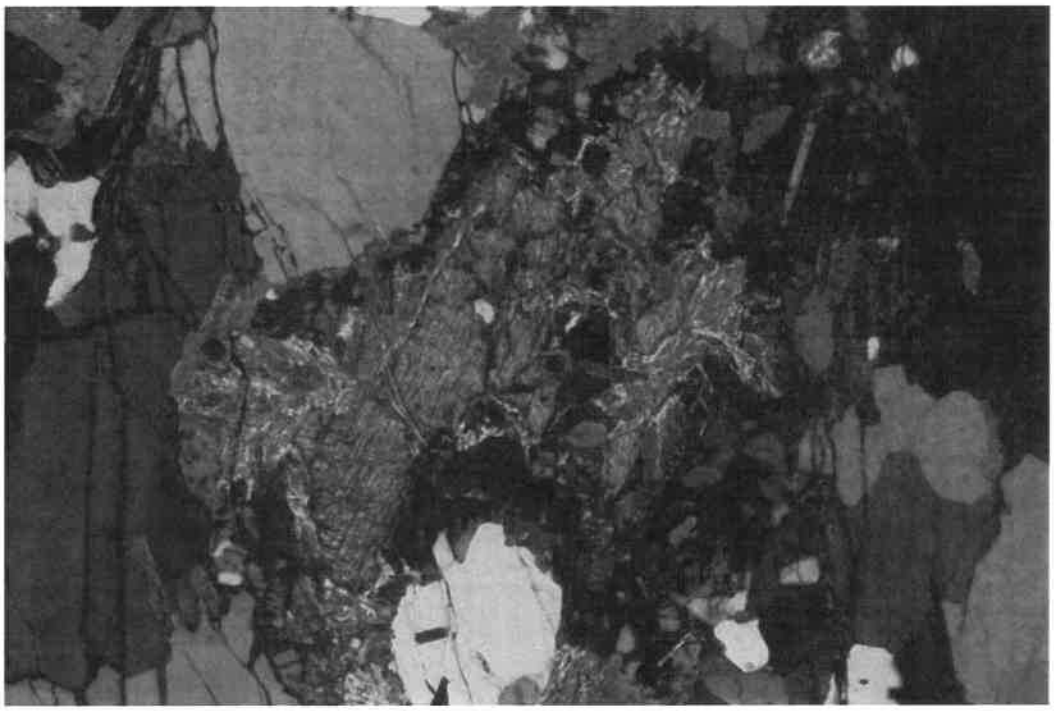
B-2 R5 55-56 3KQ_015.jpg/XPL/FOV = 1.85 x 2.69 mm ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST showing typical closeup appearance of biotite moderately altered to sillimanite (same view as 3KQ_016.jpg).



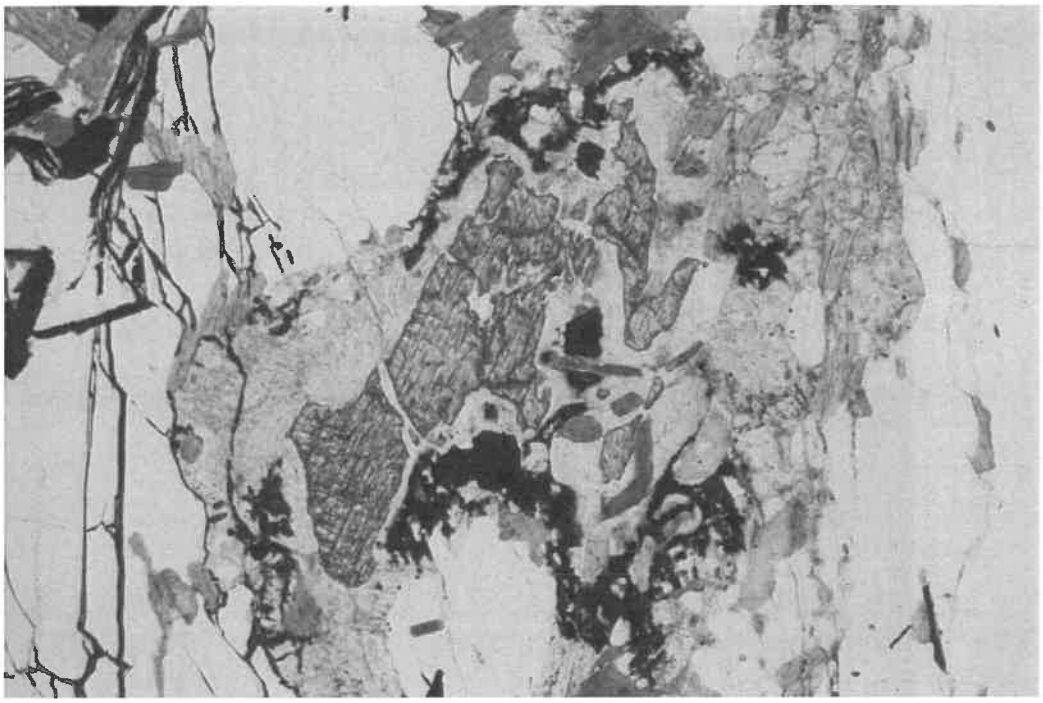
B-2 R5 55-56 3KQ_016.jpg/PPL/FOV = 1.85 x 2.69 mm ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST showing typical closeup appearance of biotite moderately altered to sillimanite (same view as 3KQ_015.jpg).



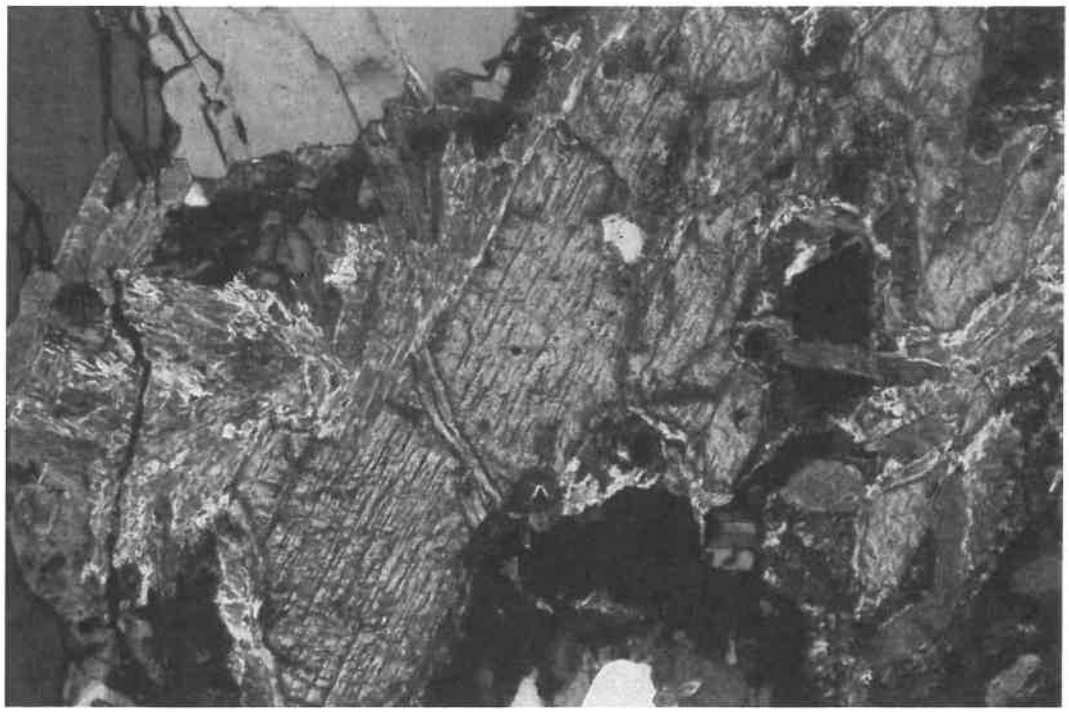
B-2 R5 55-56 3KQ_017.jpg/XPL/FOV = 1.85 x 2.69 mm ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST showing typical closeup appearance of kyanite moderately altered to muscovite (same view as 3KQ_018.jpg).



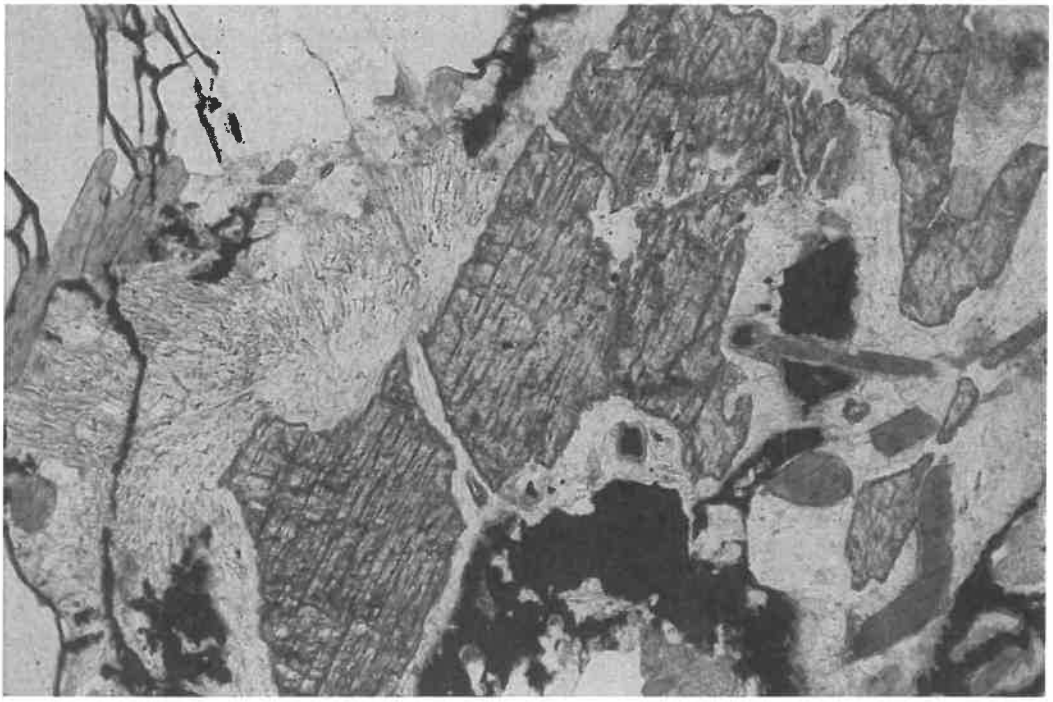
B-2 R5 55-56 3KQ_018.jpg/PPL/FOV = 1.85 x 2.69 mm ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST showing typical closeup appearance of kyanite moderately altered to muscovite (same view as 3KQ_017.jpg).



B-2 R5 55-56 3KQ_019.jpg/XPL/FOV = 0.96 x 1.40 mm ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST showing typical closeup appearance of kyanite moderately altered to muscovite (same view as 3KQ_020.jpg).



B-2 R5 55-56 3KQ_020.jpg/PPL/FOV = 0.96 x 1.40 mm ALTERED MUSCOVITE-SILLIMANITE-PLAGIOCLASE-BIOTITE-QUARTZ SCHIST showing typical closeup appearance of kyanite moderately altered to muscovite (same view as 3KQ_019.jpg).



SAMPLE # **B-5 R16 160-170** October 2, 2012

ROCK NAME ALTERED BIOTITE-QUARTZ-PLAGIOCLASE SCHIST – probably formed by regional dynamothermal ductile metamorphism and alteration (secondary muscovite + chlorite + carbonate) of a biotite tonalite (?) or plagioclase-rich arkose protolith.

MINERALS Plagioclase (55%) + quartz (18%) + biotite (16%) + opaques (6%) + muscovite (5%) + garnet (<1%) + apatite (<1%) + zircon (<1%) + chlorite (<1%) + carbonate (<1%).

TEXTURES Metamorphic, granoblastic. Metamorphism has produced a weakly directed fabric.

Porphyroblasts (0%)

Matrix (100%) is composed of granoblastic [plagioclase + quartz + biotite + opaques + muscovite + garnet + apatite + zircon + carbonate]. Grain contacts are straight to sutured.

ALTERATION Alteration features of indeterminate relative ages: (1) regional dynamothermal, ductile, prograde metamorphism; (2) plagioclase weakly altered to muscovite; and (2) biotite weakly altered to muscovite + chlorite.

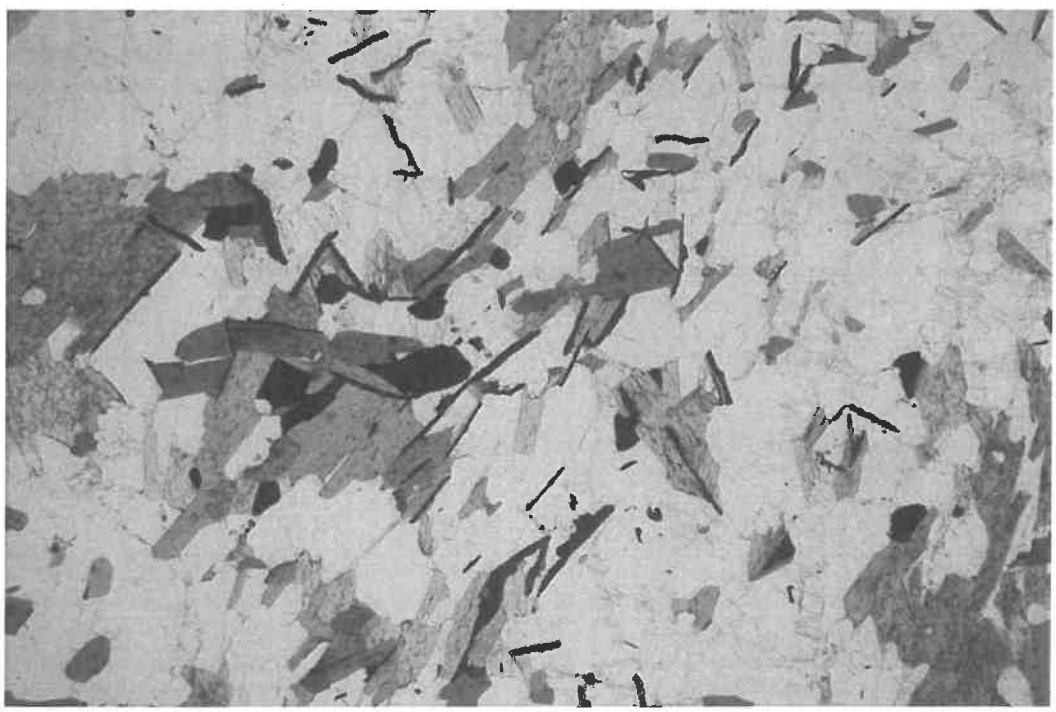
SECTIONING Format: 27 x 46 mm Finish: STD Stains: SCN (top ½) Cover: PLA

IMAGES

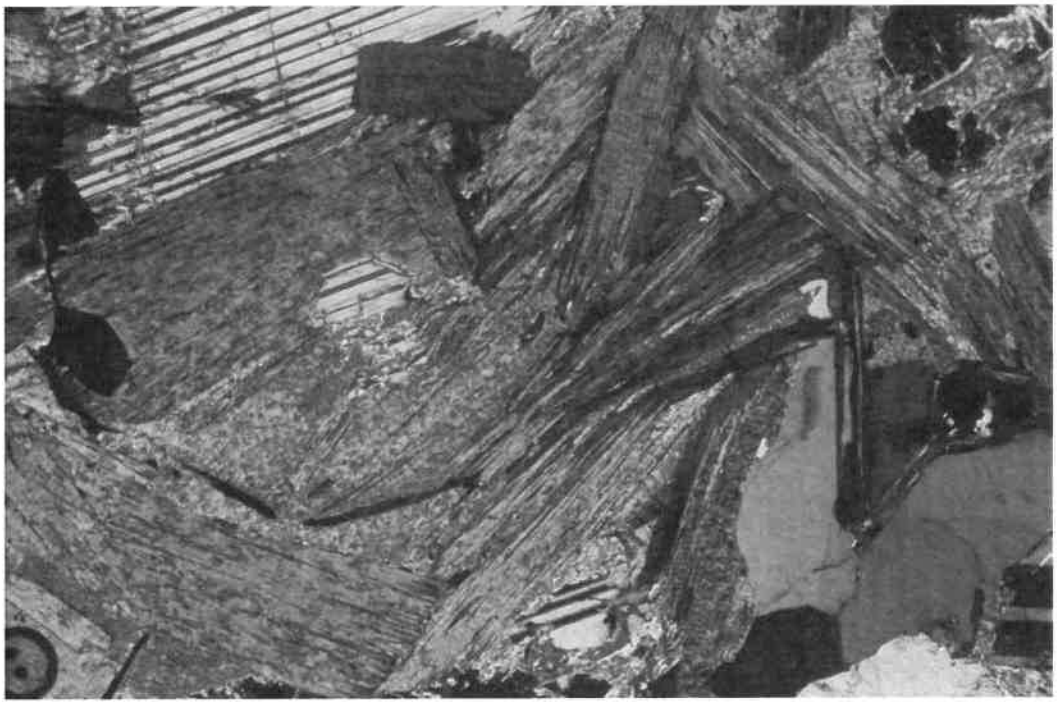
B-5 R16 160-170 3KQ_021.jpg/XPL/FOV = 4.00 x 5.83 mm ALTERED BIOTITE-QUARTZ-PLAGIOCLASE SCHIST showing typical appearance (same view as 3KQ_022.jpg).



B-5 R16 160-170 3KQ_022.jpg/PPL/FOV = 4.00 x 5.83 mm ALTERED BIOTITE-QUARTZ-PLAGIOCLASE SCHIST showing typical appearance (same view as 3KQ_021.jpg).



B-5 R16 160-170 3KQ_023.jpg/XPL/FOV = 1.85 x 2.69 mm ALTERED BIOTITE-QUARTZ-PLAGIOCLASE SCHIST showing typical closeup appearance of biotite weakly altered to muscovite + chlorite (same view as 3KQ_024.jpg).



B-5 R16 160-170 3KQ_024.jpg/PPL/FOV = 1.85 x 2.69 mm ALTERED BIOTITE-QUARTZ-PLAGIOCLASE SCHIST showing typical closeup appearance of biotite weakly altered to muscovite + chlorite (same view as 3KQ_023).

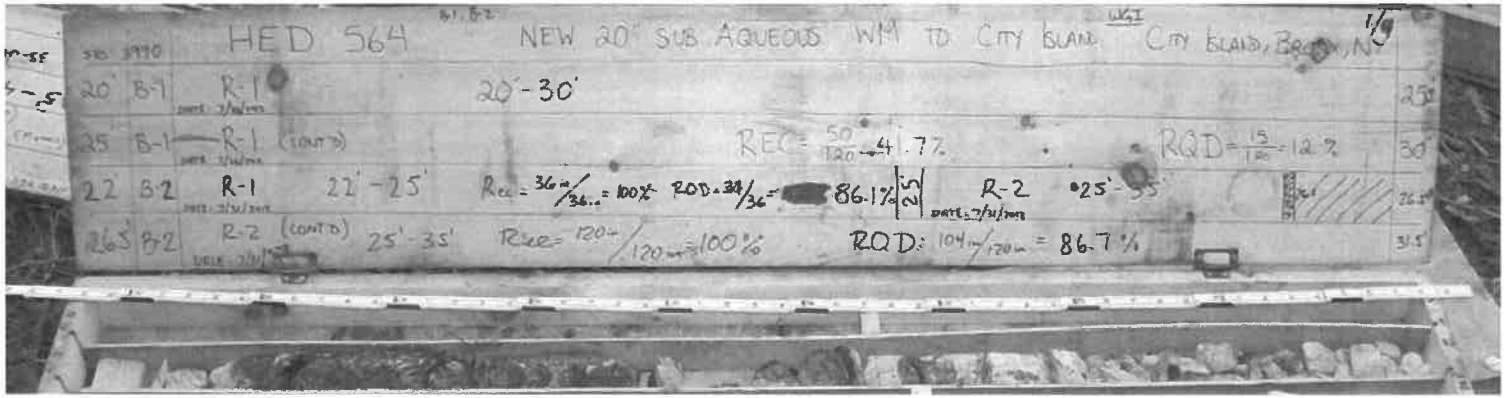


APPENDIX C

Rock Core Photo Logs

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (Land) SES # 3990						Box No.		1/1	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-1	R-1	-1	-11	20	30	50	41.7	15	12.0



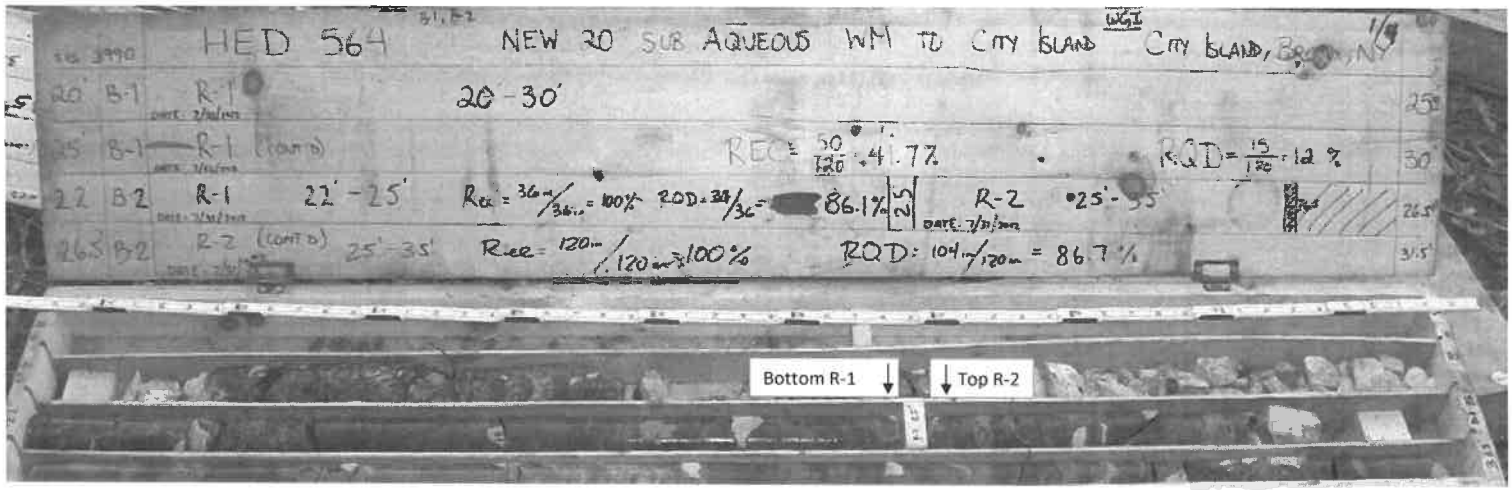
TOP R-1

R-1 BOTTOM

Rock Core Photograph: B-1, Box 1 of 1

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (Land) SES # 3990						Box No.		1/4	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-2	R-1	-3	-6	22	25	36	100	31	86.1
B-2	R-2	-6	-16	25	35	120	100	104	86.7



TOP R-1

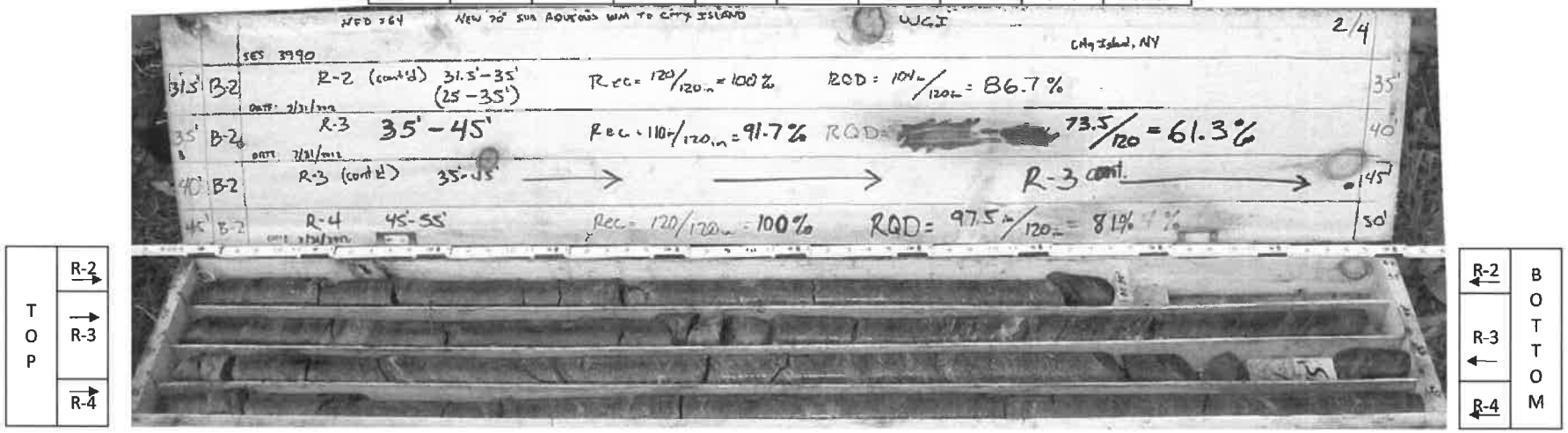
R-2 BOTTOM

Rock Core Photograph: B-2, Box 1 of 4

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

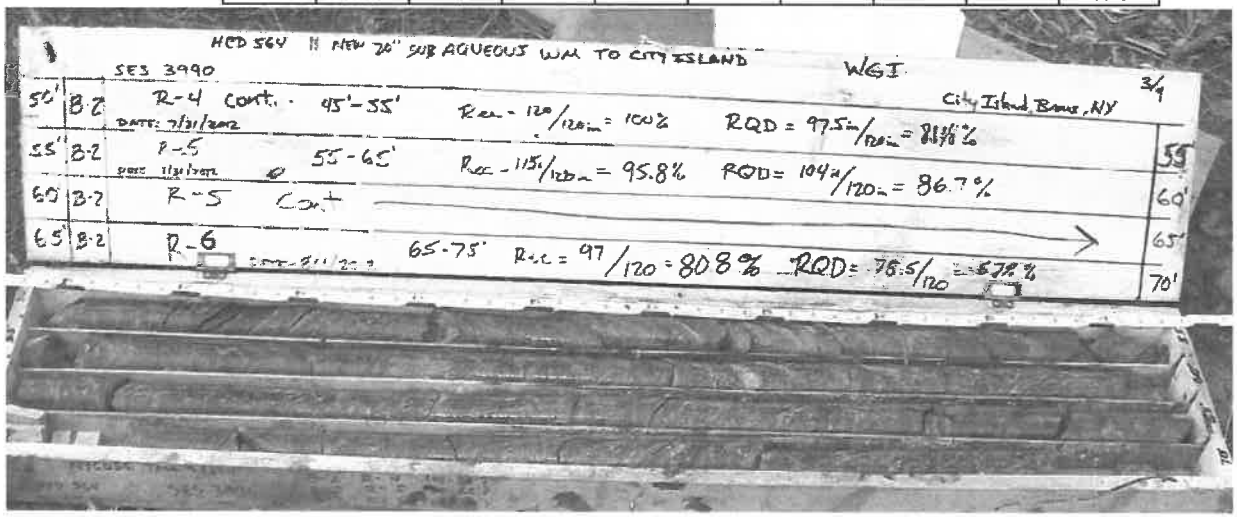
Site: Eastchester Bay (Land) SES # 3990						Box No.		2/4	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-2	R-2	-6	-16	25	35	120	100	104	86.7
B-2	R-3	-16	-26	35	45	110	91.7	73.5	61.3
B-2	R-4	-26	-36	45	55	120	100	97.5	81.3



Rock Core Photograph: B-2, Box 2 of 4

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (Land) SES # 3990						Box No.		3/4	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-2	R-4	-26	-36	45	55	120	100	97.5	81.3
B-2	R-5	-36	-46	55	65	115	95.8	104	86.7
B-2	R-6	-46	-56	65	75	97	80.8	75.5	63.0



TOP: R-4 → R-5 → R-6 →

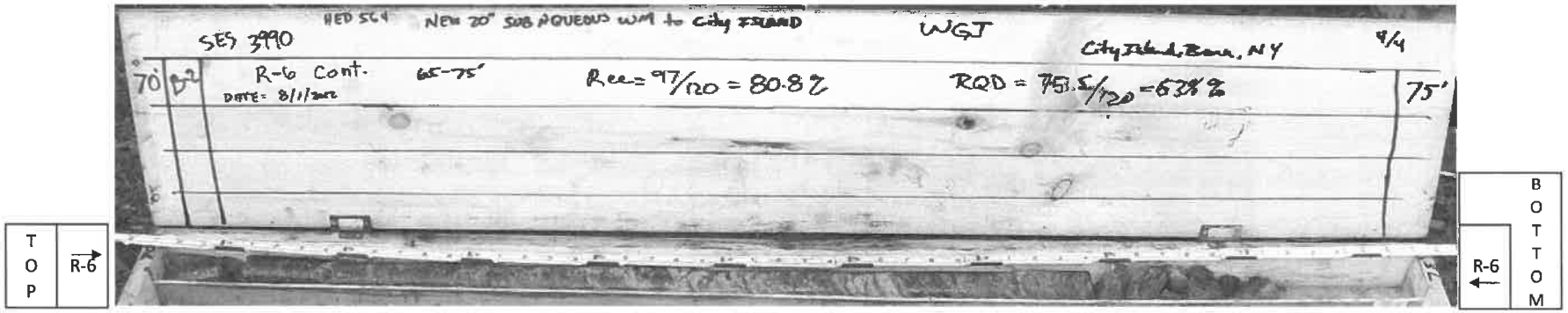
BOTTOM: ← R-4 ← R-5 ← R-6

Rock Core Photograph: B-2, Box 3 of 4

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

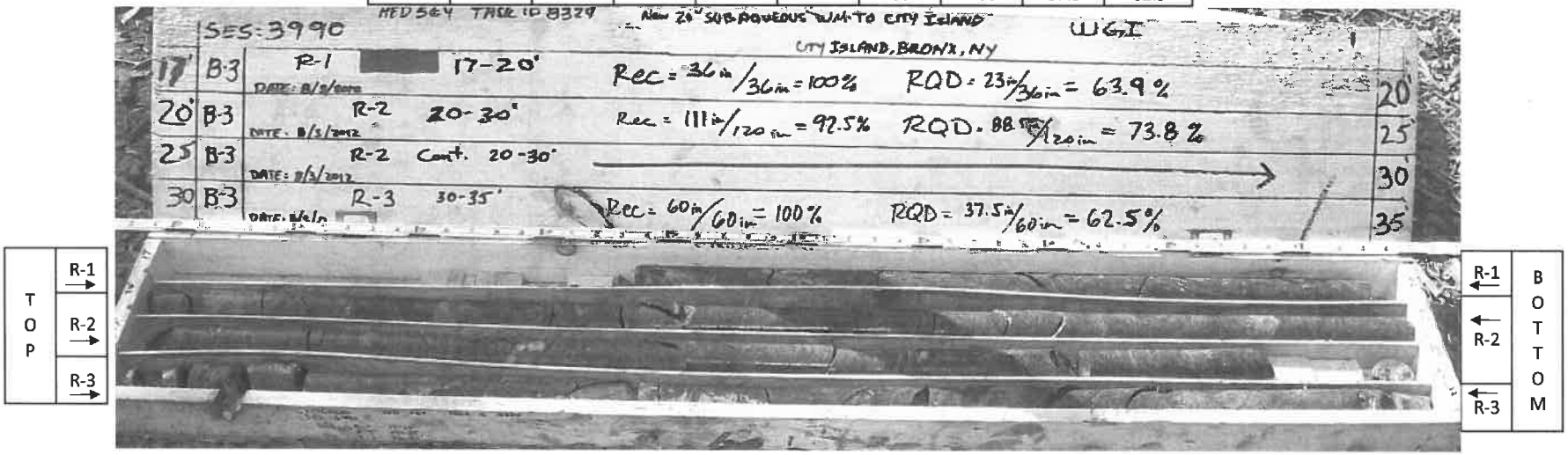
Site: Eastchester Bay (Land) SES # 3990						Box No.		4/4	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-2	R-6	-46	-56	65	75	97	80.8	75.5	63



Rock Core Photograph: B-2, Box 4 of 4

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (Land) SES # 3990						Box No.		1/7	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-3	R-1	2	-1	17	20	36	100	23	63.9
B-3	R-2	-1	-11	20	30	111	92.5	88.5	73.8
B-3	R-3	-11	-16	30	35	60	100	37.5	62.5

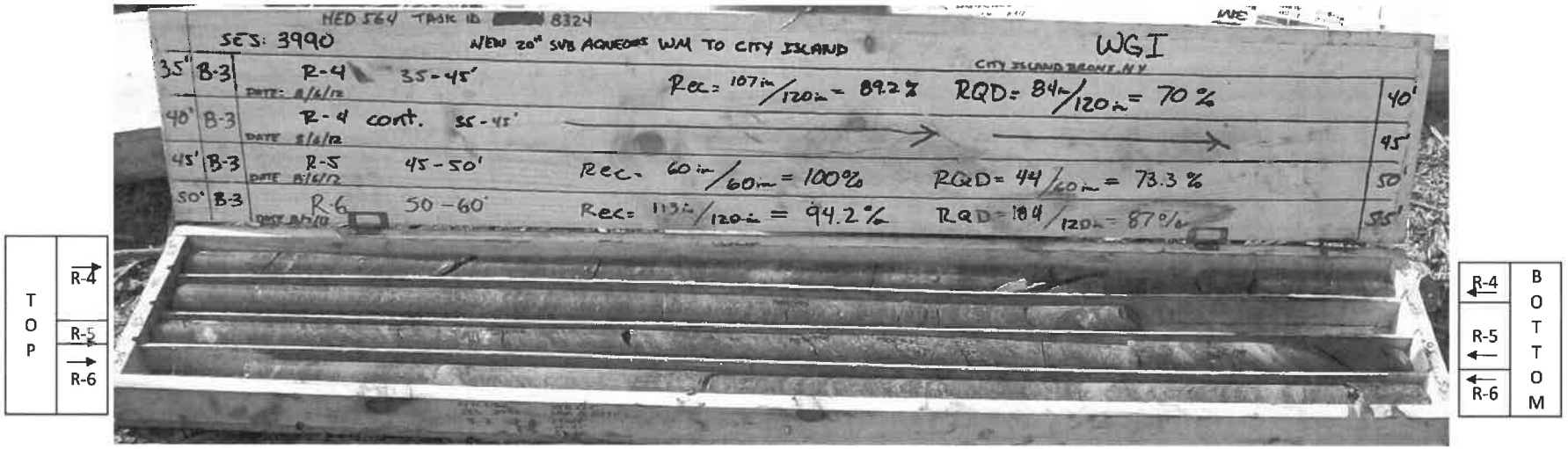


Rock Core Photograph: B-3, Box 1 of 7

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

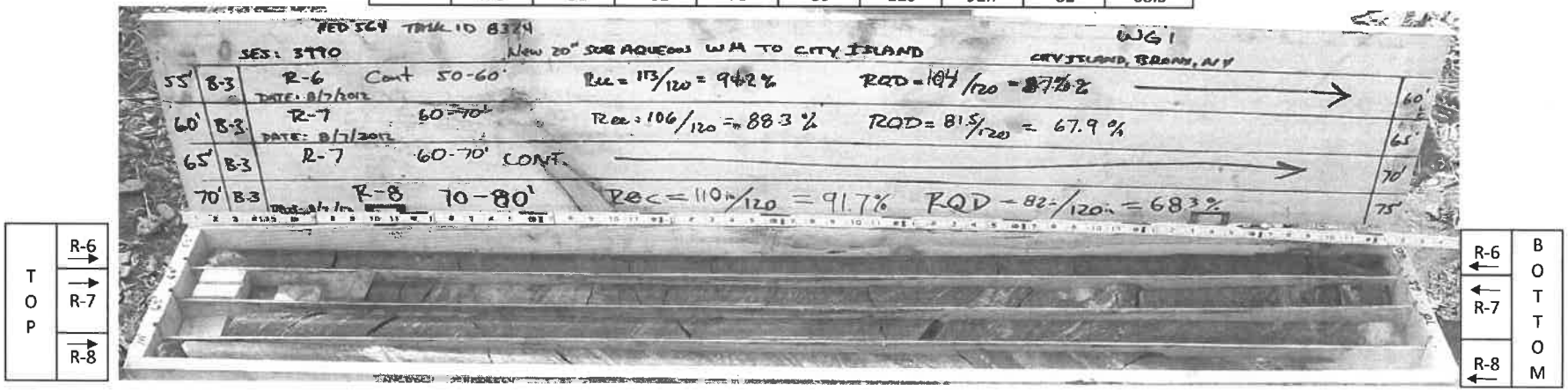
Site: Eastchester Bay (Land) SES # 3990						Box No.		2/7	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-3	R-4	-16	-26	35	45	107	89.2	84	70
B-3	R-5	-26	-31	45	50	60	100	44	73.3
B-3	R-6	-31	-41	50	60	113	94.2	104	87



Rock Core Photograph: B-3, Box 2 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

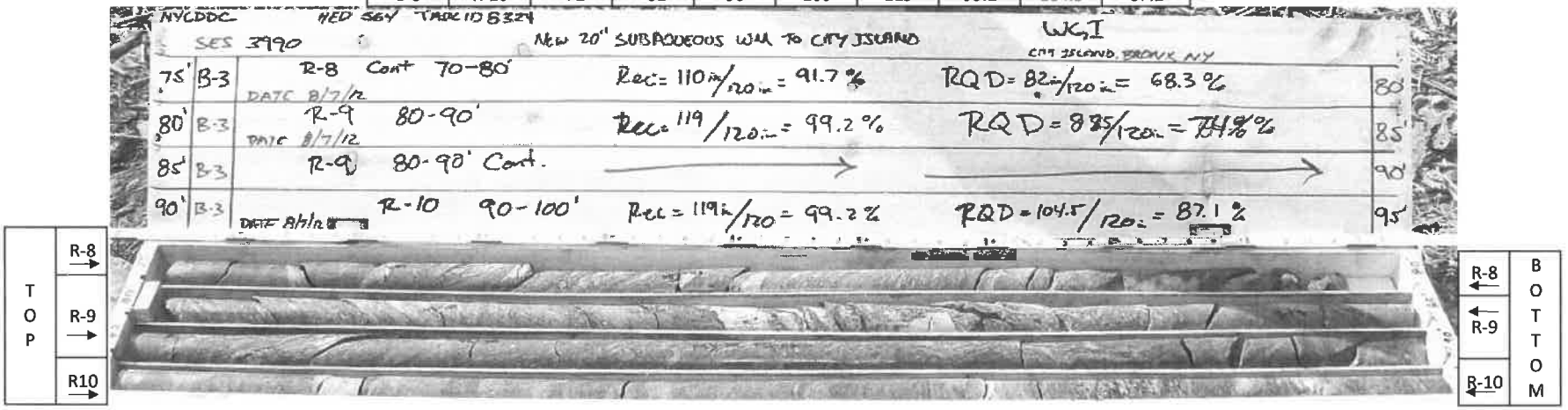
Site: Eastchester Bay (Land) SES # 3990						Box No.		3/7	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-3	R-6	-31	-41	50	60	113	94.2	104	87
B-3	R-7	-41	-51	60	70	106	88.3	81.5	67.9
B-3	R-8	-51	-61	70	80	110	91.7	82	68.3



Rock Core Photograph: B-3, Box 3 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

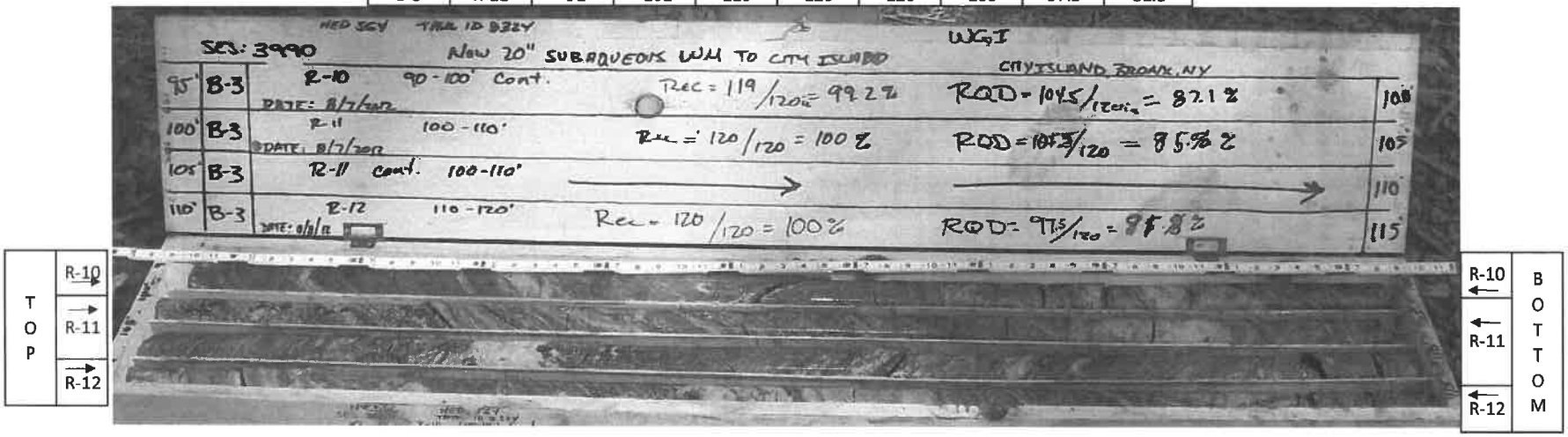
Site: Eastchester Bay (Land) SES # 3990						Box No.		4/7	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-3	R-8	-51	-61	70	80	110	91.7	82	68.3
B-3	R-9	-61	-71	80	90	119	99.2	88.5	74
B-3	R-10	-71	-81	90	100	119	99.2	104.5	87.1



Rock Core Photograph: B-3, Box 4 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

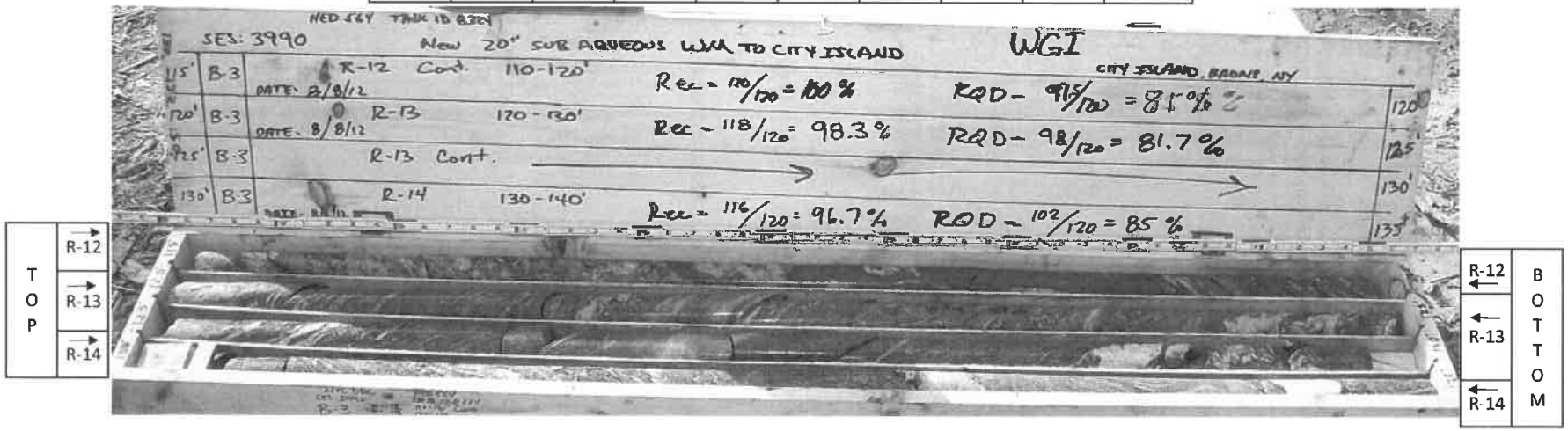
Site: Eastchester Bay (Land) SES # 3990						Box No.		5/7	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-3	R-10	-71	-81	90	100	119	99.2	104.5	87.1
B-3	R-11	-81	-91	100	110	120	100	101.5	85
B-3	R-12	-91	-101	110	120	120	100	97.5	81.3



Rock Core Photograph: B-3, Box 5 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

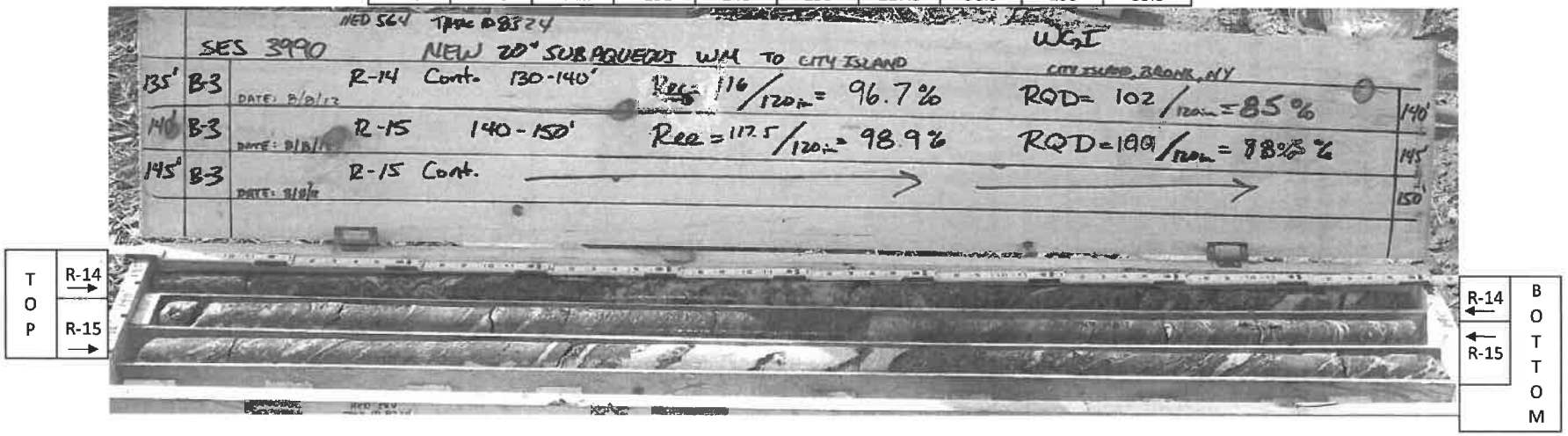
Site: Eastchester Bay (Land) SES # 3990						Box No.		6/7	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-3	R-12	-91	-101	110	120	120	100	97.5	81
B-3	R-13	-101	-111	120	130	118	98.3	98	81.7
B-3	R-14	-111	-121	130	140	116	96.7	102	85



Rock Core Photograph: B-3, Box 6 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

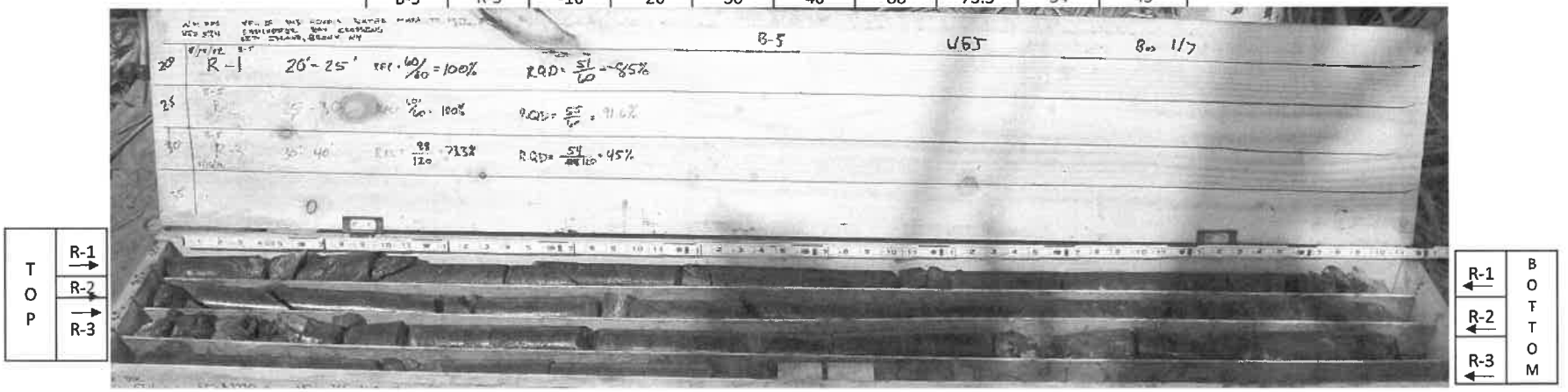
Site: Eastchester Bay (Land) SES # 3990						Box No.		7/7	
Task ID: 8324						Surface El. (ft)		19	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-3	R-14	-111	-121	130	140	116	96.7	102	85
B-3	R-15	-121	-131	140	150	117.5	98.9	100	83.3



Rock Core Photograph: B-3, Box 7 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

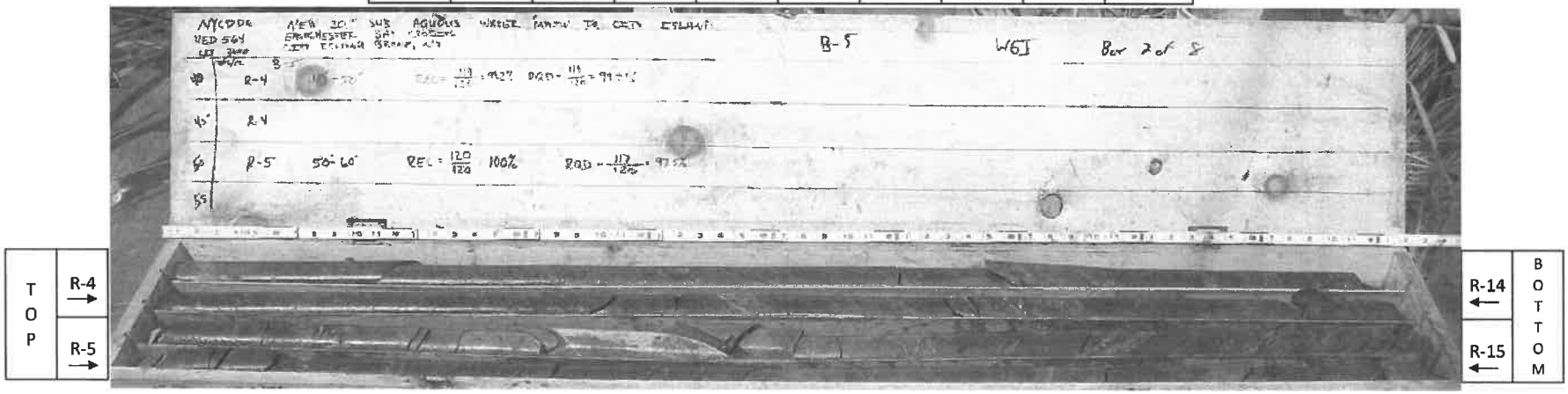
Site: Eastchester Bay (Land) SES # 3990						Box No.		1/8	
Task ID: 8324						Surface El. (ft)		14	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-5	R-1	-6	-11	20	25	60	100	51	85
B-5	R-2	-11	-16	25	30	60	100	55	91.7
B-5	R-3	-16	-26	30	40	88	73.3	54	45



Rock Core Photograph: B-5, Box 1 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

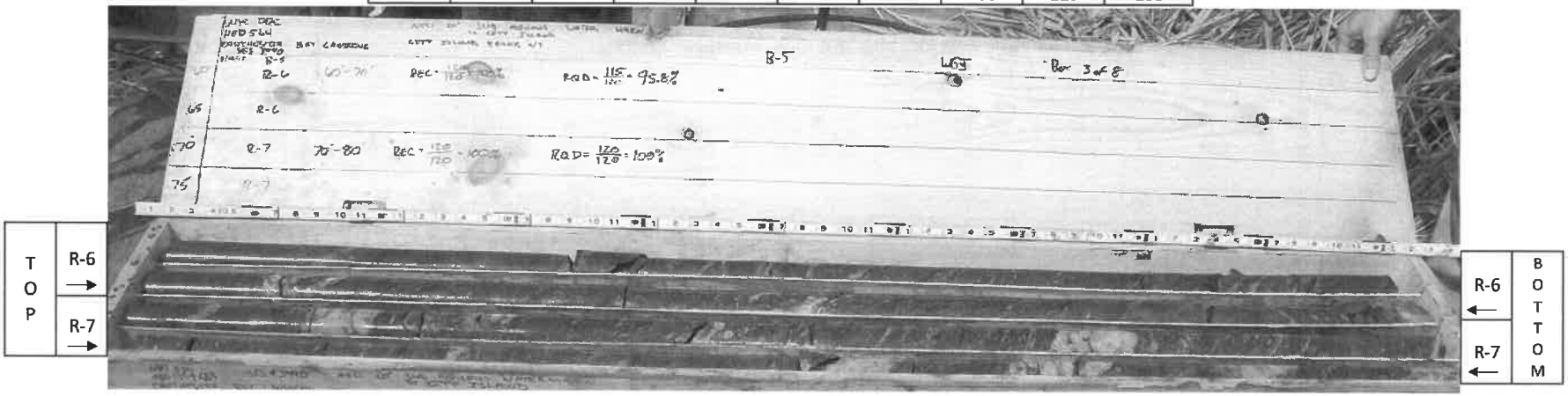
Site: Eastchester Bay (Land) SES # 3990						Box No.		2/8	
Task ID: 8324						Surface El. (ft)		14	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-5	R-4	-26	-36	40	50	119	99.2	119	99.2
B-5	R-5	-36	-46	50	60	120	100	117	97.5



Rock Core Photograph: B-5, Box 2 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

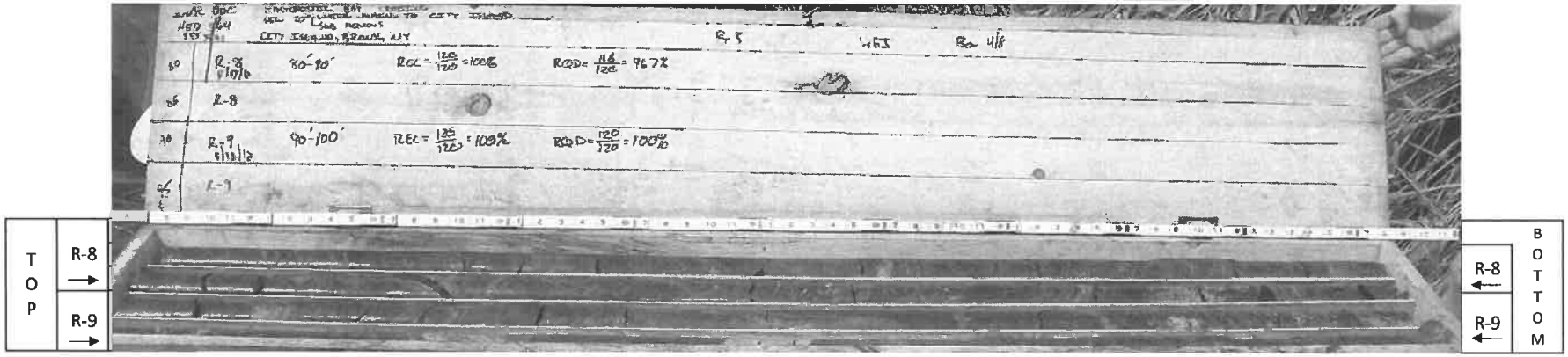
Site: Eastchester Bay (Land) SES # 3990						Box No.		3/8	
Task ID: 8324						Surface El. (ft)		14	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-5	R-6	-46	-56	60	70	120	100	115	95.8
B-5	R-7	-56	-66	70	80	120	100	120	100



Rock Core Photograph: B-5, Box 3 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

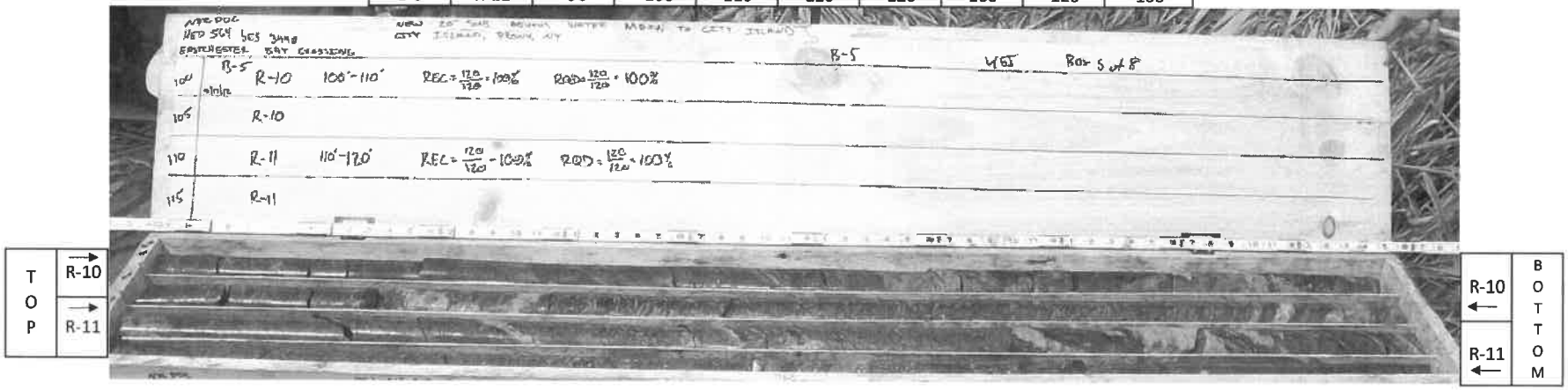
Site: Eastchester Bay (Land) SES # 3990						Box No.		4/8	
Task ID: 8324						Surface El. (ft)		14	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-5	R-8	-66	-76	80	90	120	100	116	96.7
B-5	R-9	-76	-86	90	100	120	100	120	100



Rock Core Photograph: B-5, Box 4 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

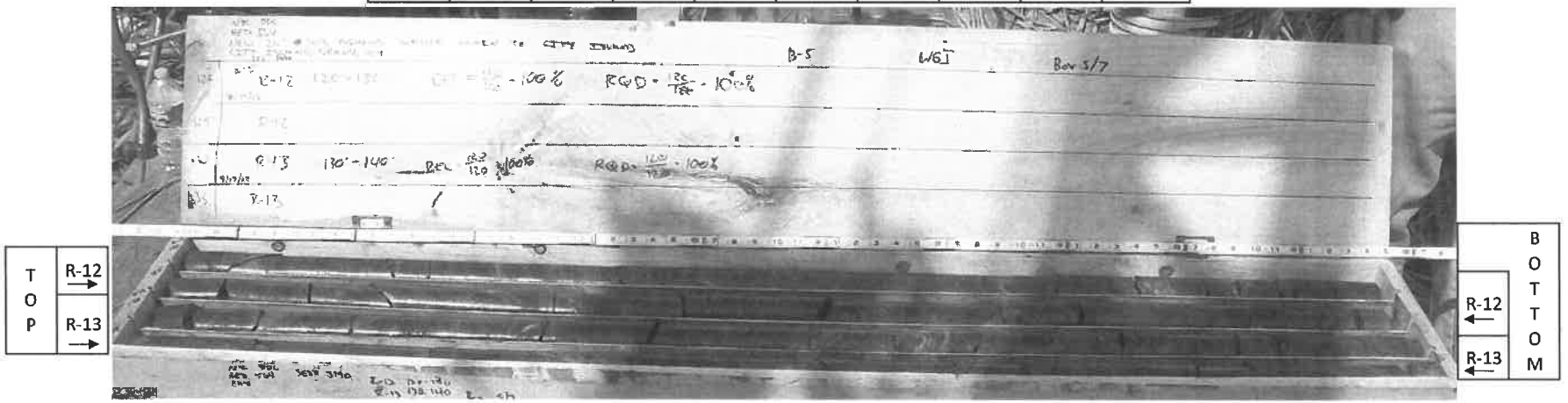
Site: Eastchester Bay (Land) SES # 3990						Box No.		5/8	
Task ID: 8324						Surface El. (ft)		14	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-5	R-10	-86	-96	100	110	120	100	120	100
B-5	R-11	-96	-106	110	120	120	100	120	100



Rock Core Photograph: B-5, Box 5 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (Land) SES # 3990						Box No.		6/8	
Task ID: 8324						Surface El. (ft)		14	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-5	R-12	-106	-116	120	130	120	100	120	100
B-5	R-13	-116	-126	130	140	120	100	120	100



Rock Core Photograph: B-5, Box 6 of 8

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

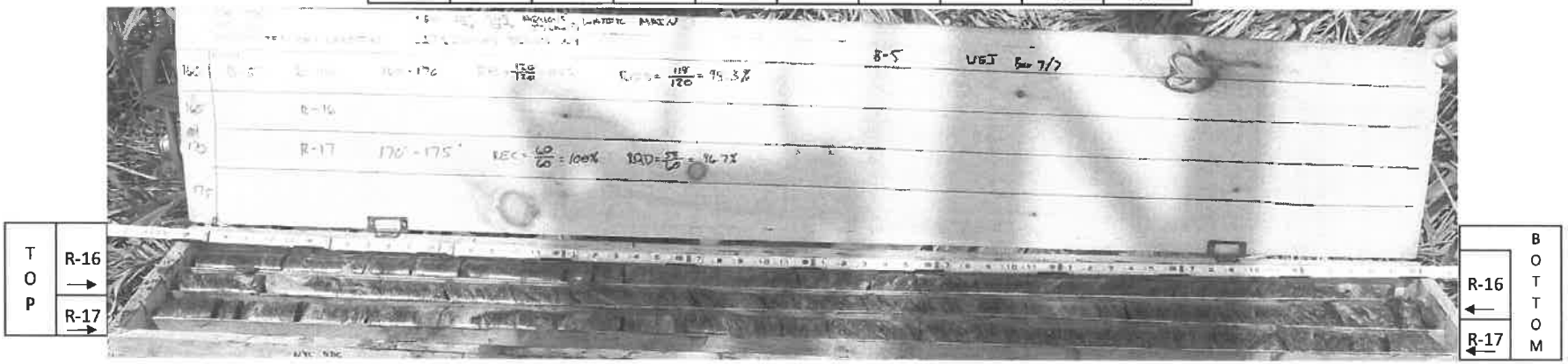
Site: Eastchester Bay (Land) SES # 3990						Box No.		7/8	
Task ID: 8324						Surface El. (ft)		14	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-5	R-14	-126	-136	140	150	120	100	111.5	92.9
B-5	R-15	-136	-146	150	160	120	100	117	97.5



Rock Core Photograph: B-5, Box 7 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

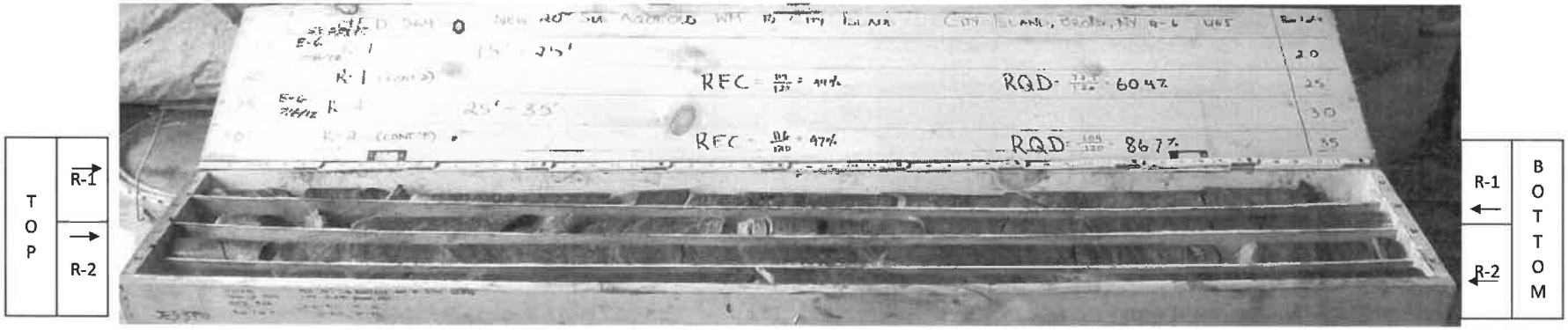
Site: Eastchester Bay (Land) SES # 3990						Box No.		8/8	
Task ID: 8324						Surface El. (ft)		14	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-5	R-16	-146	-156	160	170	120	100	118	98.3
B-5	R-17	-156	-161	170	175	60	100	58	96.7



Rock Core Photograph: B-5, Box 8 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

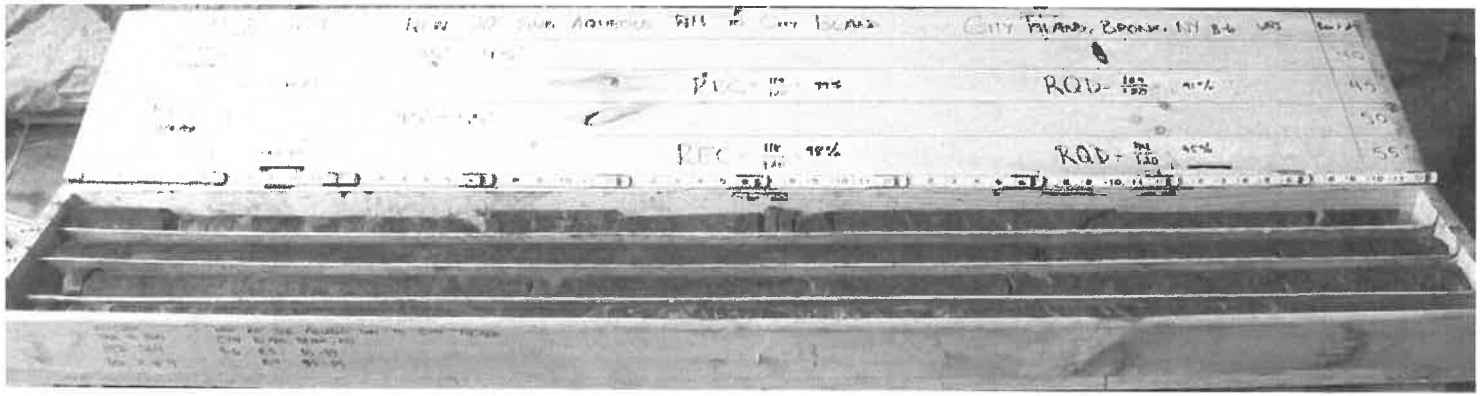
Site: Eastchester Bay (marine) SES # 3990						Box No.		1/9	
Task ID: 8324						Surface El. (ft)		-13.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-6	R-1	-28.4	-38.4	15	25	113	94.2	72.5	60.4
B-6	R-2	-38.4	-48.4	25	35	116	97	104	86.7



Rock Core Photograph: B-6, Box 1 of 9

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		2/9	
Task ID: 8324						Surface El. (ft)		-13.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-6	R-3	-48.4	-58.4	35	45	119	99	109	91
B-6	R-4	-58.4	-68.4	45	55	118	98	114	95



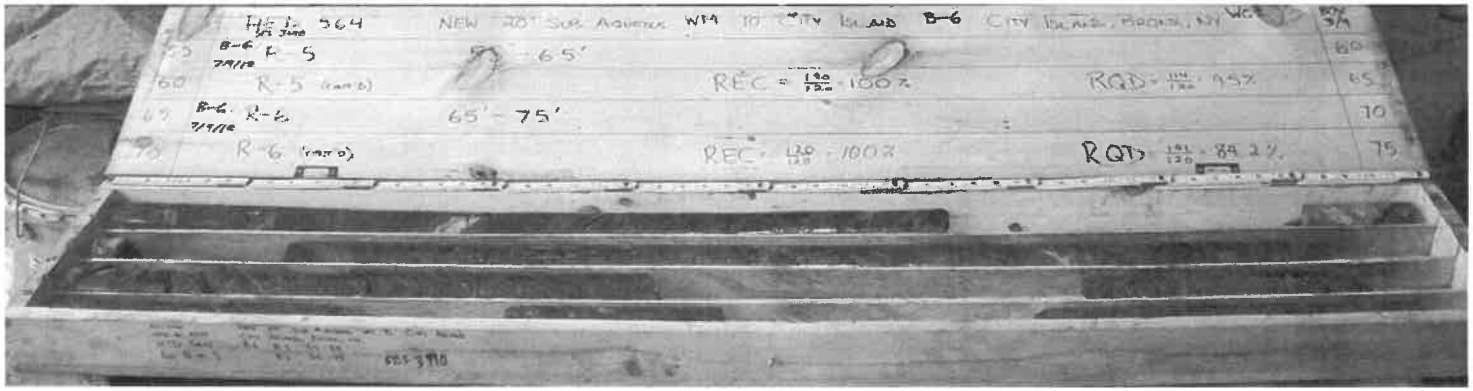
Rock Core Photograph: B-6, Box 2 of 9

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		3/9	
Task ID: 8324						Surface El. (ft)		-13.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-6	R-5	-68.4	-78.4	55	65	120	100	114	95
B-6	R-6	-78.4	-88.4	65	75	120	100	101	84.2

TOP
R-5 →
R-6 →



R-5 ←
R-6 ←
BOTTOM

Rock Core Photograph: B-6, Box 3 of 9

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		4/9	
Task ID: 8324						Surface El. (ft)		-13.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-6	R-7	-88.4	-98.4	75	85	118	98	107.5	89.6
B-6	R-8	-98.4	-108.4	85	95	120	100	103	85.8



Rock Core Photograph: B-6, Box 4 of 9

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		5/9	
Task ID: 8324						Surface El. (ft)		-13.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-6	R-9	-108.4	-118.4	95	105	118	98	112	93.3
B-6	R-10	-118.4	-128.4	105	115	120	100	110.5	92



Rock Core Photograph: B-6, Box 5 of 9

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

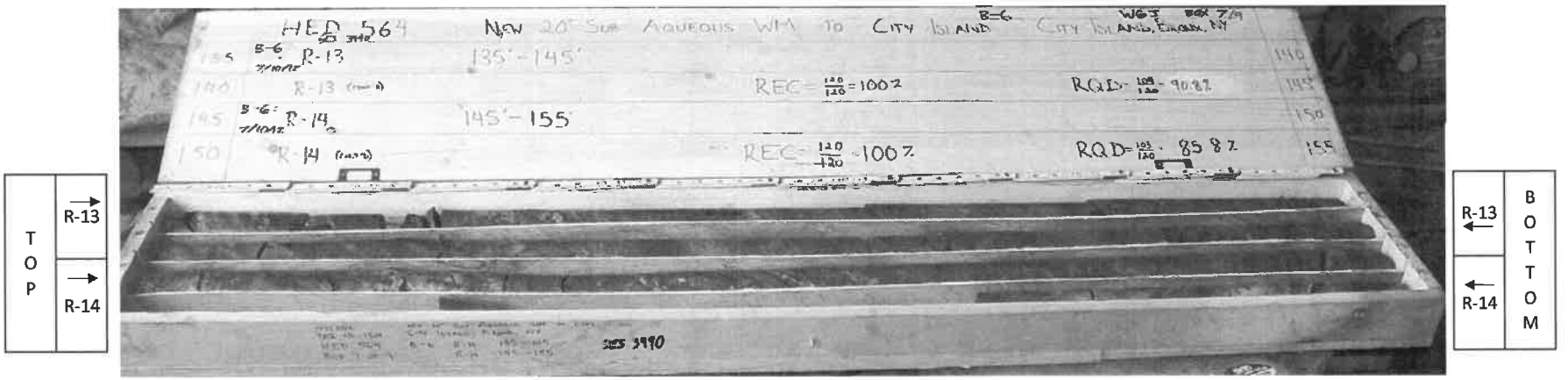
Site: Eastchester Bay (marine) SES # 3990						Box No.		6/9	
Task ID: 8324						Surface El. (ft)		-13.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-6	R-11	-128.4	-138.4	115	125	120	100	113	94.2
B-6	R-12	-138.4	-148.4	125	135	120	100	109	90.8



Rock Core Photograph: B-6, Box 6 of 9

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		7/9	
Task ID: 8324						Surface El. (ft)		-13.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-6	R-13	-148.4	-158.4	135	145	120	100	109	90.8
B-6	R-14	-158.4	-168.4	145	155	120	100	103	85.8



Rock Core Photograph: B-6, Box 7 of 9

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		8/9	
Task ID: 8324						Surface El. (ft)		-13.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-6	R-15	-168.4	-178.4	155	165	120	100	113.5	94.6
B-6	R-16	-178.4	-188.4	165	175	120	100	109	91

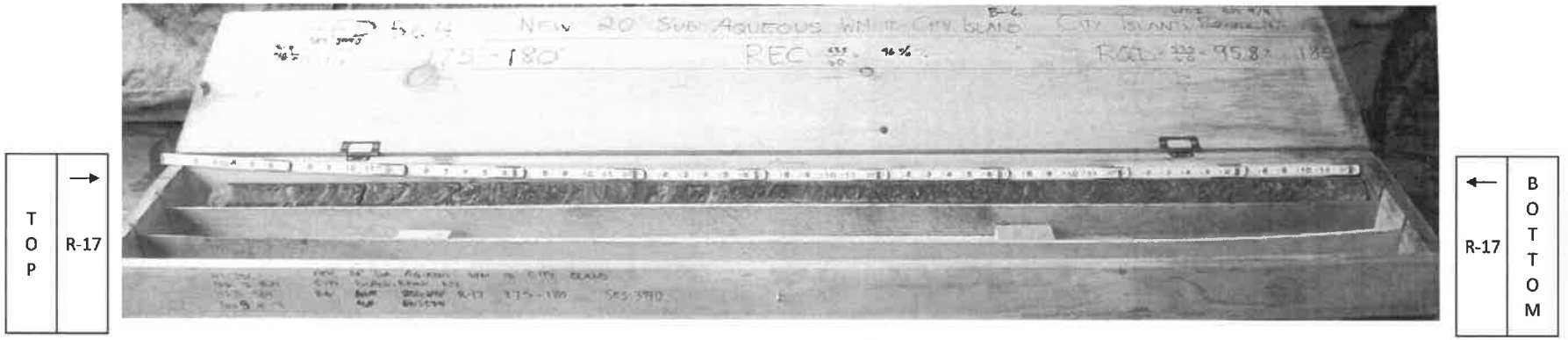


Rock Core Photograph: B-6, Box 8 of 9

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		9/9	
Task ID: 8324						Surface El. (ft)		-13.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-6	R-17	-188.4	-193.4	175	180	57.5	96	57.5	95.8



Rock Core Photograph: B-6, Box 9 of 9

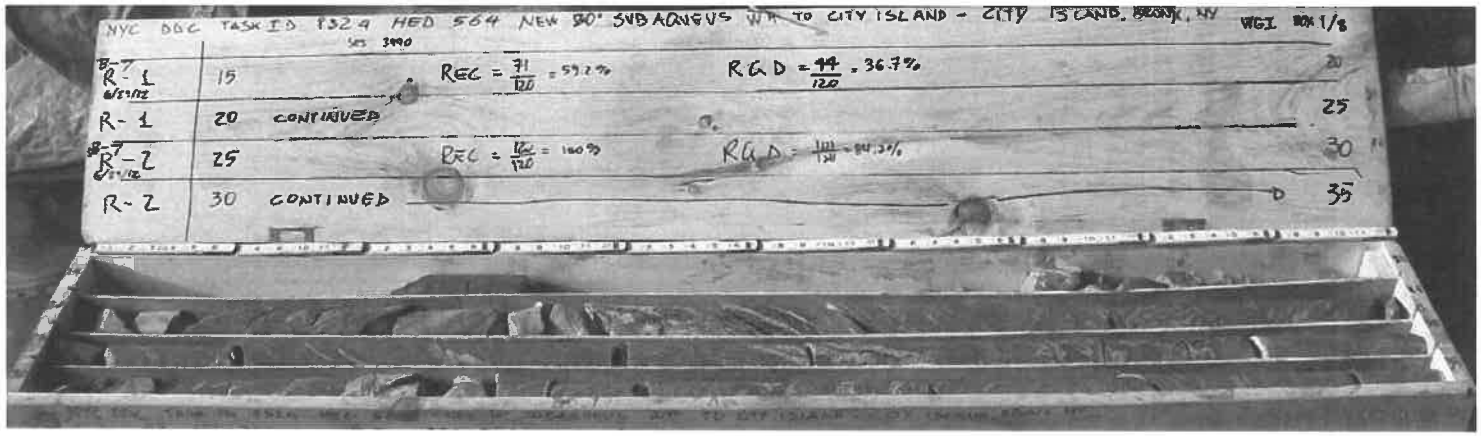
New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		1/8	
Task ID: 8324						Surface El. (ft)		-13.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-7	R-1	-28.2	-38.2	15	25	71	59.2	44	36.7
B-7	R-2	-38.2	-48.2	25	35	120	100	101	84.2

TOP

R-1 →

R-2 →



R-1 ←

R-2 ←

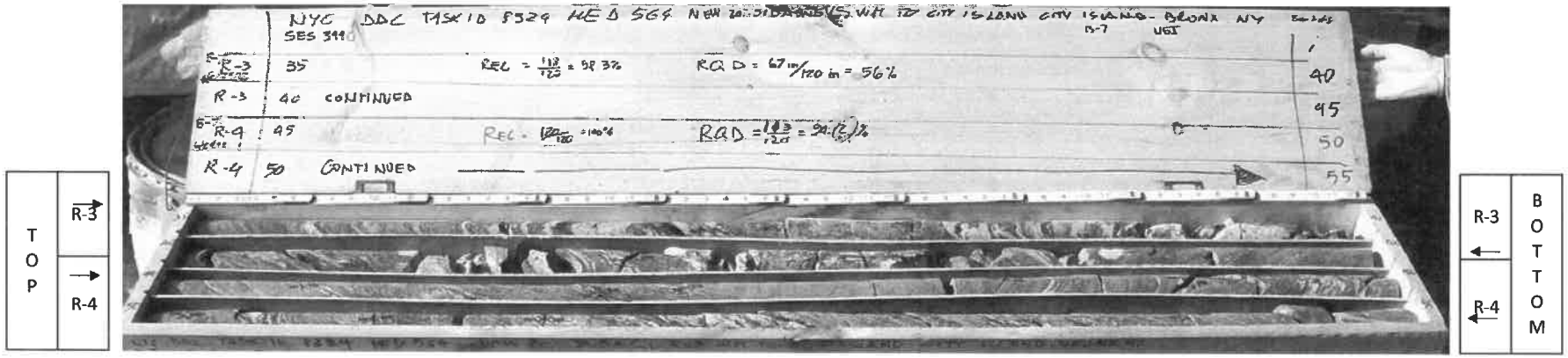
BOTTOM

Rock Core Photograph: B-7, Box 1 of 8

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

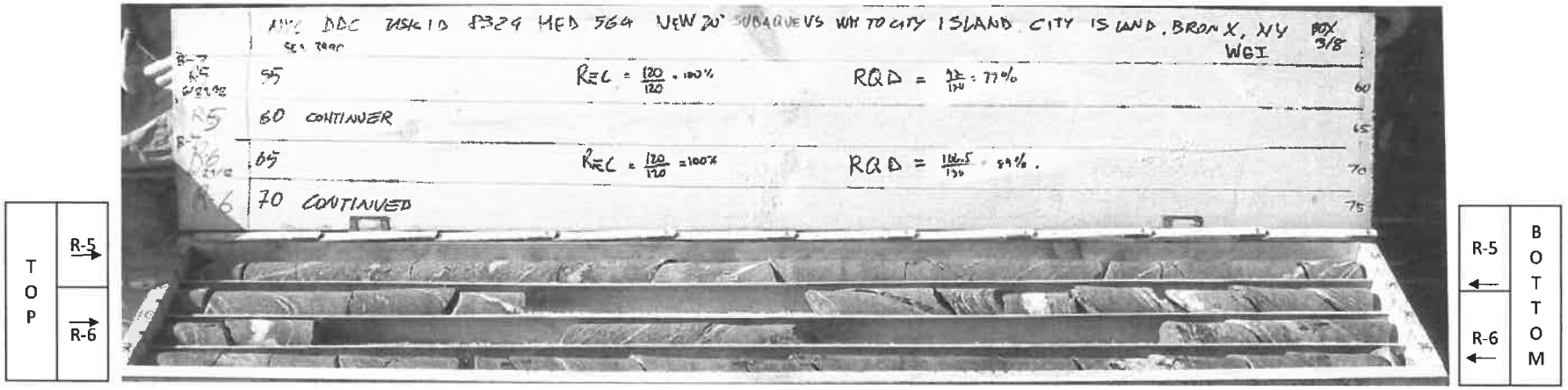
Site: Eastchester Bay (marine) SES # 3990						Box No.		2/8	
Task ID: 8324						Surface El. (ft)		-13.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-7	R-3	-48.2	-58.2	35	45	118	98.3	67	56
B-7	R-4	-58.2	-68.2	45	55	120	100	113	94.2



Rock Core Photograph: B-7, Box 2 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		3/8	
Task ID: 8324						Surface El. (ft)		-13.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-7	R-5	-68.2	-78.2	55	65	120	100	92	77
B-7	R-6	-78.2	-88.2	65	75	120	100	106.5	89

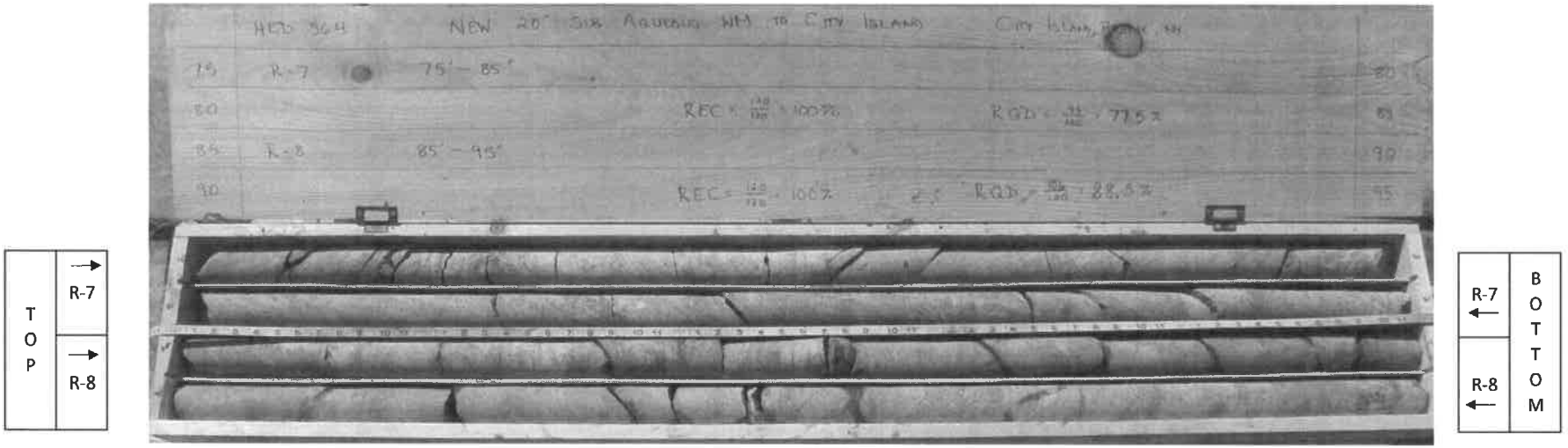


Rock Core Photograph: B-7, Box 3 of 8

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

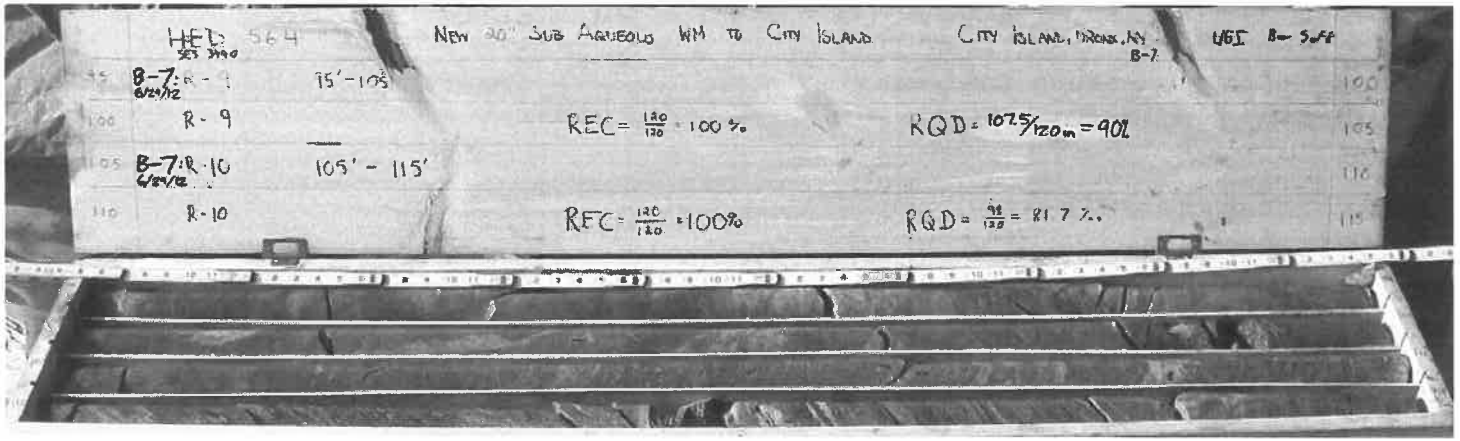
Site: Eastchester Bay (marine) SES # 3990						Box No.		4/8	
Task ID: 8324						Surface El. (ft)		-13.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-7	R-7	-88.2	-98.2	75	85	120	100	93	77.5
B-7	R-8	-98.2	-108.2	85	95	120	100	106	88.5



Rock Core Photograph: B-7, Box 4 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		5/8	
Task ID: 8324						Surface El. (ft)		-13.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-7	R-9	-108.2	-118.2	95	105	120	100	107.5	90
B-7	R-10	-118.2	-128.2	105	115	120	100	98	81.7



TOP
R-9 →
R-10 →

R-9 ←
R-10 ←
BOTTOM

Rock Core Photograph: B-7, Box 5 of 8

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

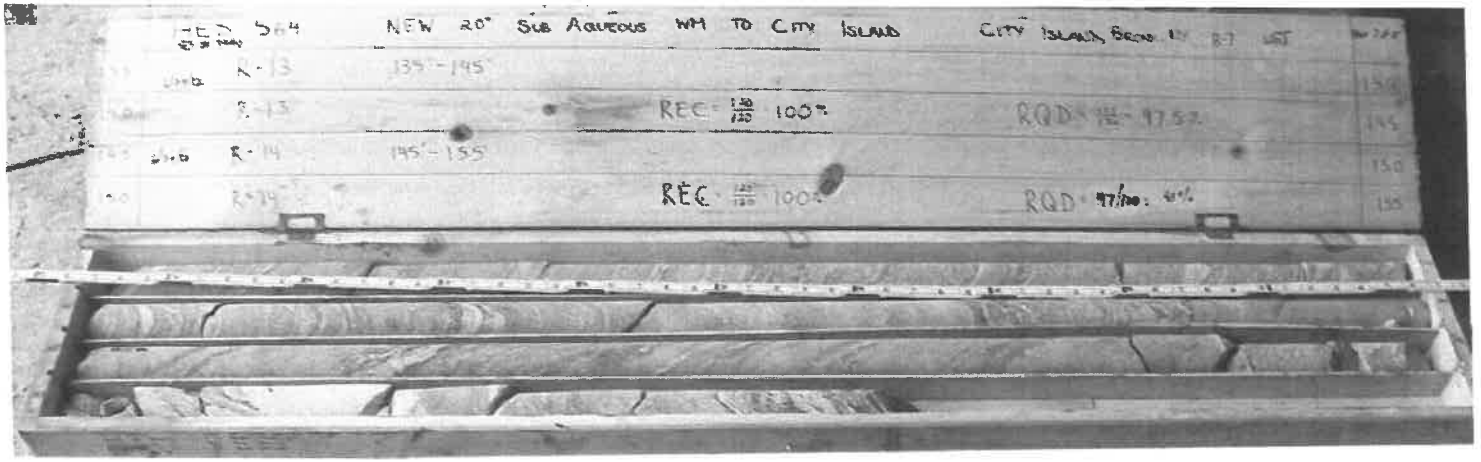
Site: Eastchester Bay (marine) SES # 3990						Box No.		6/8	
Task ID: 8324						Surface El. (ft)		-13.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-7	R-11	-128.2	-138.2	115	125	120	100	115.5	96.3
B-7	R-12	-138.2	-148.2	125	135	120	100	110.5	92.1



Rock Core Photograph: B-7, Box 6 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		7/8	
Task ID: 8324						Surface El. (ft)		-13.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-7	R-13	-148.2	-158.2	135	145	120	100	117	97.5
B-7	R-14	-158.2	-168.2	145	155	120	100	97	81



TOP → R-13 → R-14

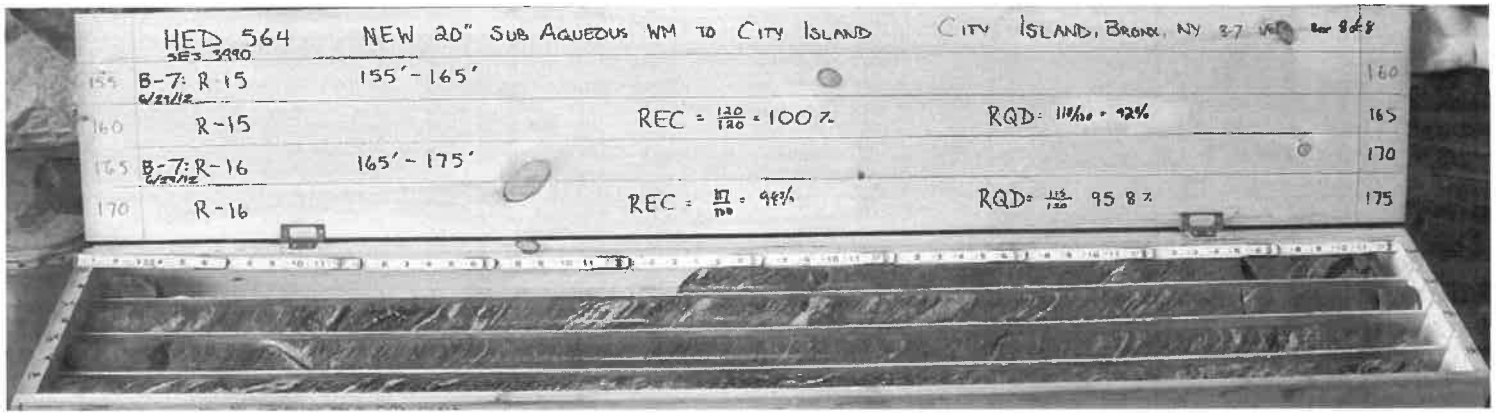
R-13 ← R-14 ← BOTTOM

Rock Core Photograph: B-7, Box 7 of 8

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

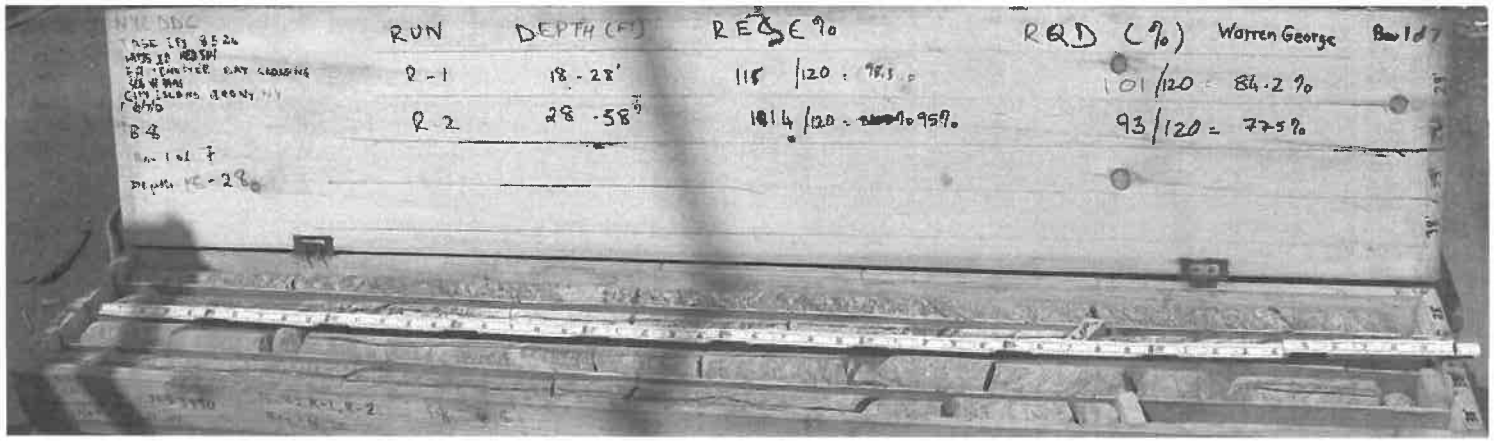
Site: Eastchester Bay (marine) SES # 3990						Box No.		8/8	
Task ID: 8324						Surface El. (ft)		-13.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-7	R-15	-168.2	-178.2	155	165	120	100	110	92
B-7	R-16	-178.2	-188.2	165	175	117	98	115	95.8



Rock Core Photograph: B-7, Box 8 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		1/7	
Task ID: 8324						Surface El. (ft)		-21.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-8	R-1	-39.4	-49.4	18	28	118	98.3	101	84.2
B-8	R-2	-49.4	-59.4	28	38	114	95	93	77.5



TOP → R-1 → R-2

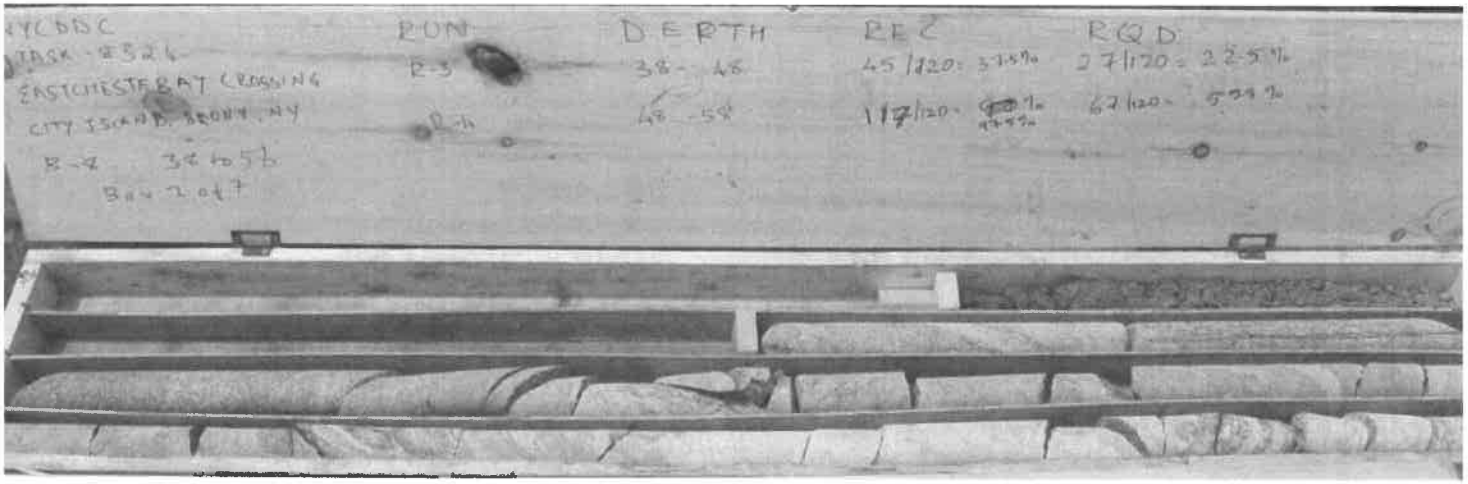
R-1 ← R-2 ← BOTTOM

Rock Core Photograph: B-8, Box 1 of 7

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		2/7	
Task ID: 8324						Surface El. (ft)		-21.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-8	R-3	-59.4	-69.4	38	48	45	37.5	27	22.5
B-8	R-4	-69.4	-79.4	48	58	117	97.5	67	55.8



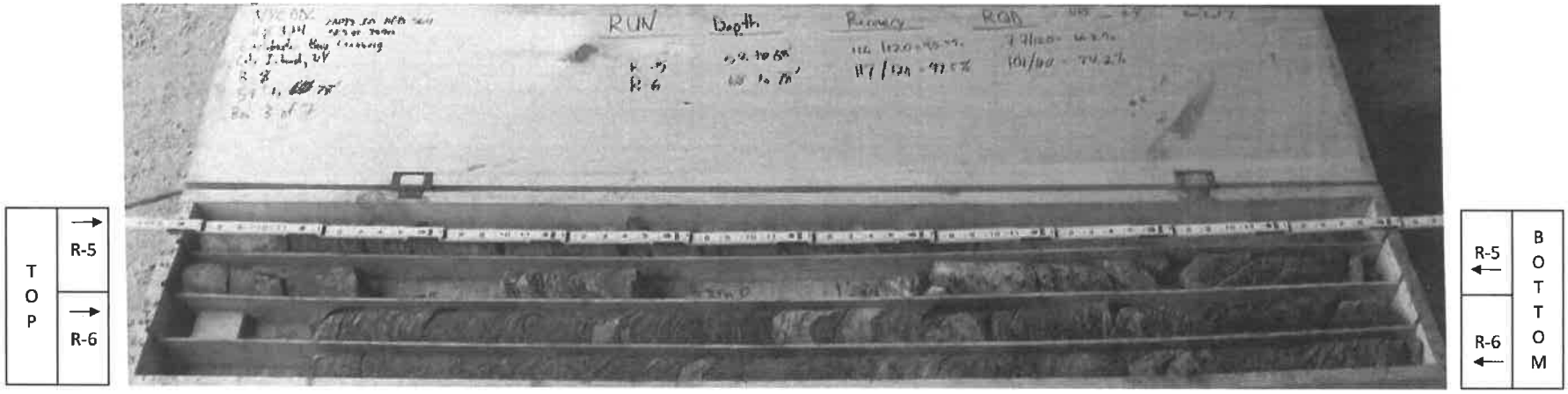
TOP → R-3 → R-4

R-3 ← R-4 ← BOTTOM

Rock Core Photograph: B-8, Box 2 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

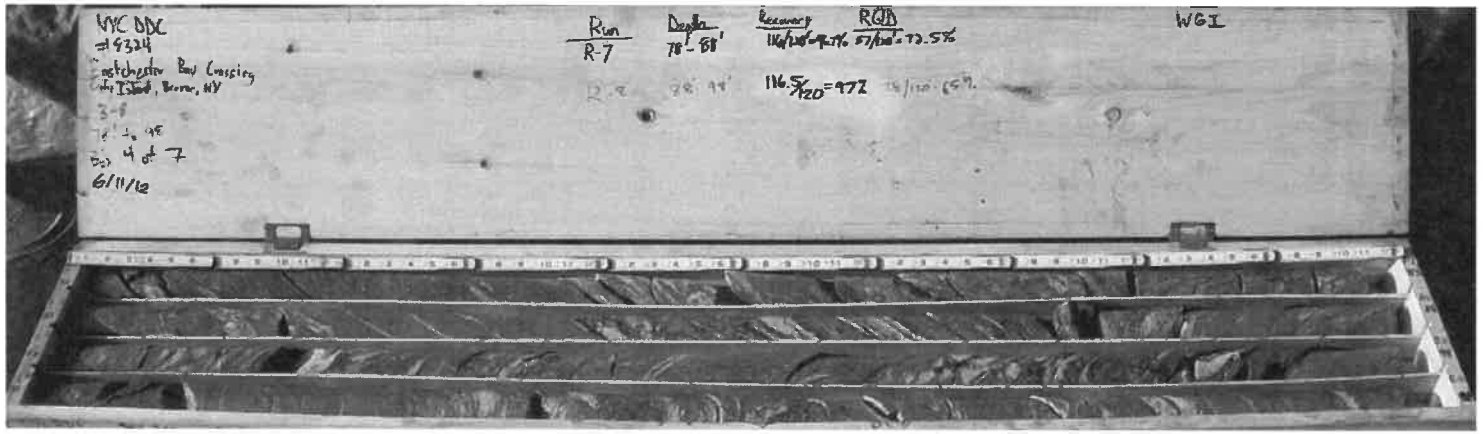
Site: Eastchester Bay (marine) SES # 3990						Box No.		3/7	
Task ID: 8324						Surface El. (ft)		-21.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-8	R-5	-79.4	-89.4	58	68	114	95.0	77	64.2
B-8	R-6	-89.4	-99.4	68	78	117	97.5	101	84.2



Rock Core Photograph: B-8, Box 3 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

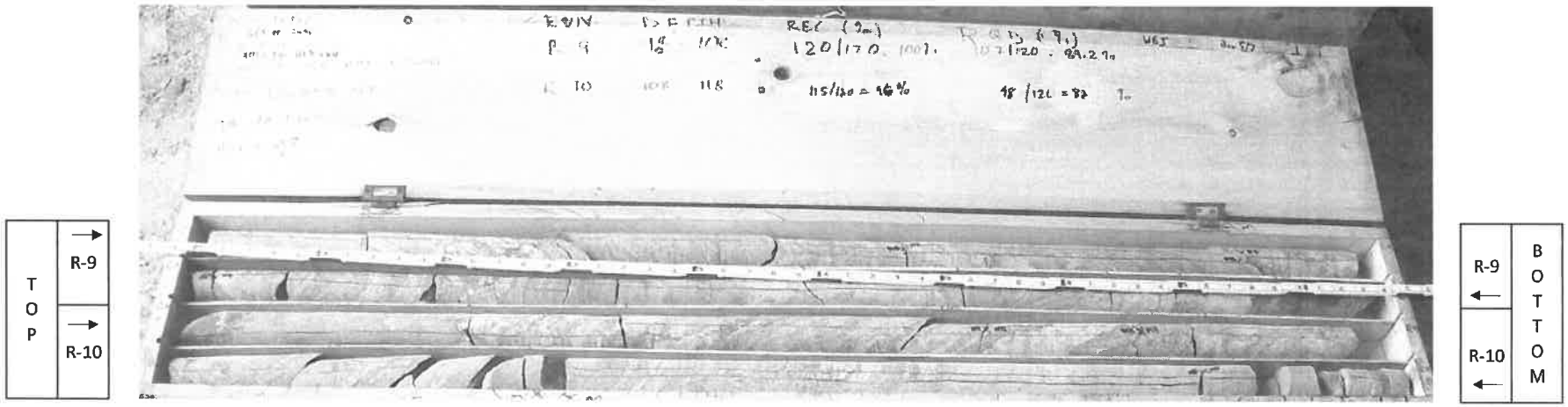
Site: Eastchester Bay (marine) SES # 3990						Box No.		4/7	
Task ID: 8324						Surface El. (ft)		-21.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-8	R-7	-99.4	-109.4	78	88	116	96.7	87	72.5
B-8	R-8	-109.4	-119.4	88	98	116.5	97	78	65



Rock Core Photograph: B-8, Box 4 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

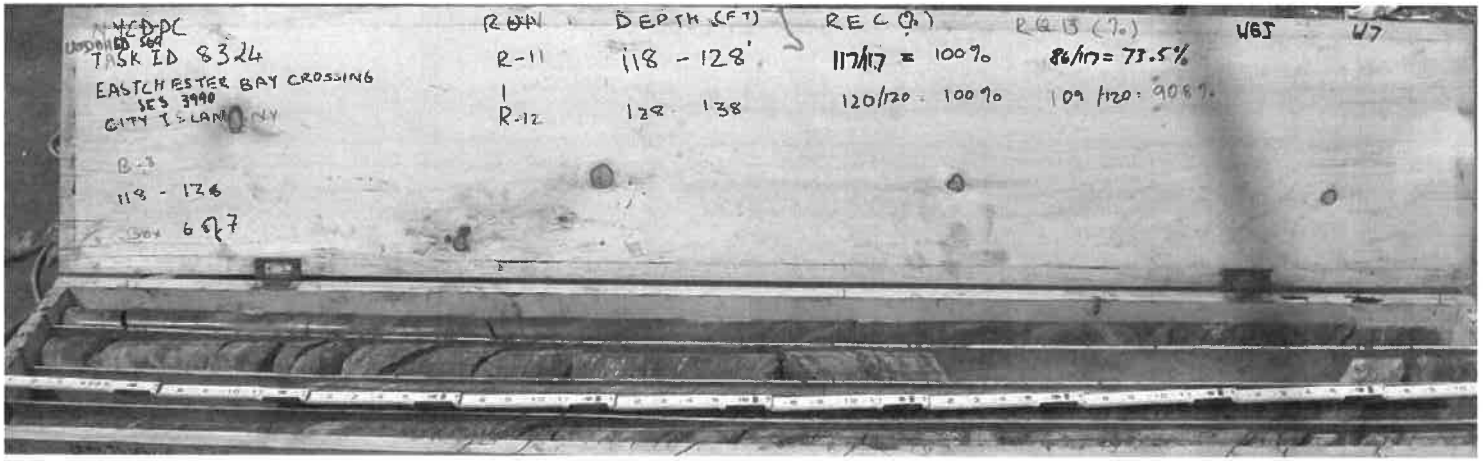
Site: Eastchester Bay (marine) SES # 3990						Box No.		5/7	
Task ID: 8324						Surface El. (ft)		-21.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-8	R-9	-119.4	-129.4	98	108	120	100	107	89.2
B-8	R-10	-129.4	-139.4	108	118	115	96	98	82



Rock Core Photograph: B-8, Box 5 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		6/7	
Task ID: 8324						Surface El. (ft)		-21.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-8	R-11	-139.4	-149.4	118	128	117	100	86	73.5
B-8	R-12	-149.4	-159.4	128	138	120	100	109	90.8



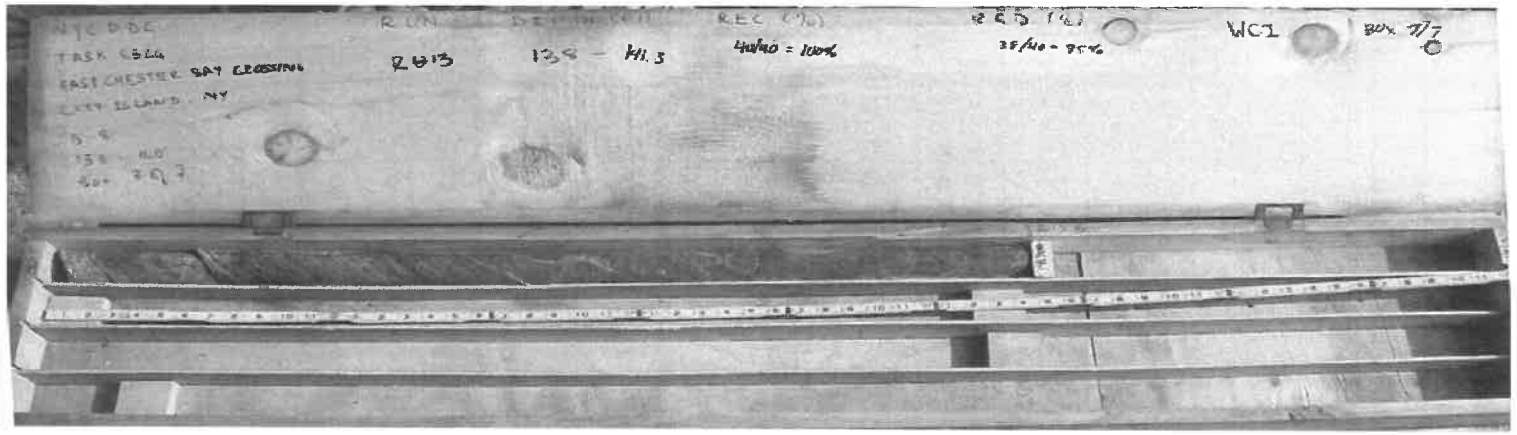
TOP: R-11 →, R-12 →

R-11 ←, R-12 ← : BOTTOM

Rock Core Photograph: B-8, Box 6 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		7/7	
Task ID: 8324						Surface El. (ft)		-21.4	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-8	R-13	-159.4	-162.7	138	141.3	40	100	38	95



Rock Core Photograph: B-8, Box 7 of 7

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

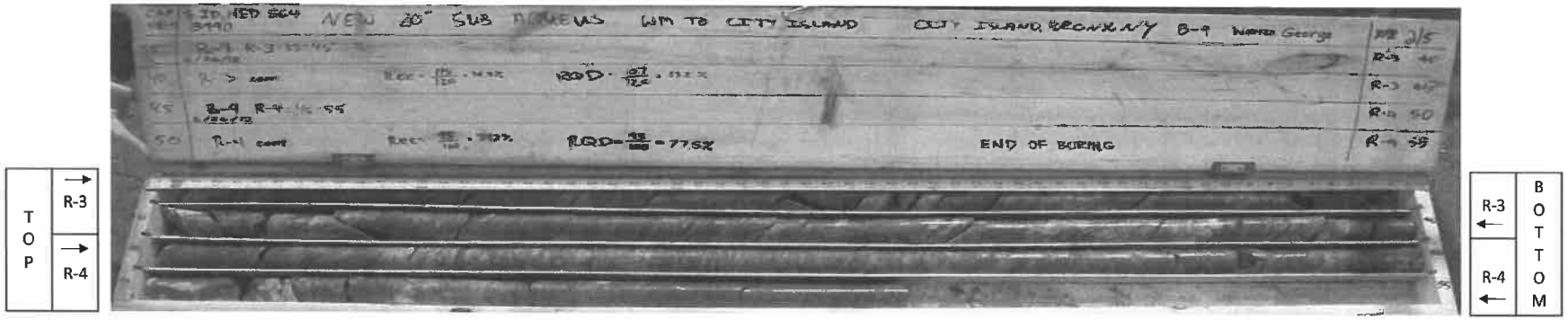
Site: Eastchester Bay (marine) SES # 3990						Box No.		1/5	
Task ID: 8324						Surface El. (ft)		-18.9	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-9	R-1	-33.9	-43.9	15	25	95	79.2	65	54.2
B-9	R-2	-43.9	-53.9	25	35	120	100	92	77



Rock Core Photograph: B-9, Box 1 of 5

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

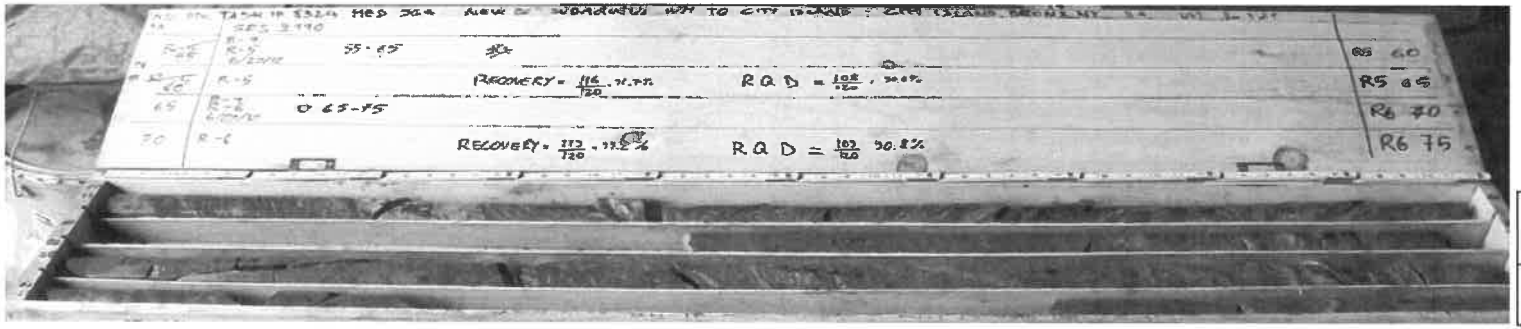
Site: Eastchester Bay (marine) SES # 3990						Box No.		2/5	
Task ID: 8324						Surface El. (ft)		-18.9	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-9	R-3	-53.9	-63.9	35	45	118	98.3	107	89.2
B-9	R-4	-63.9	-73.9	45	55	95	79.2	93	77.5



Rock Core Photograph: B-9, Box 2 of 5

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

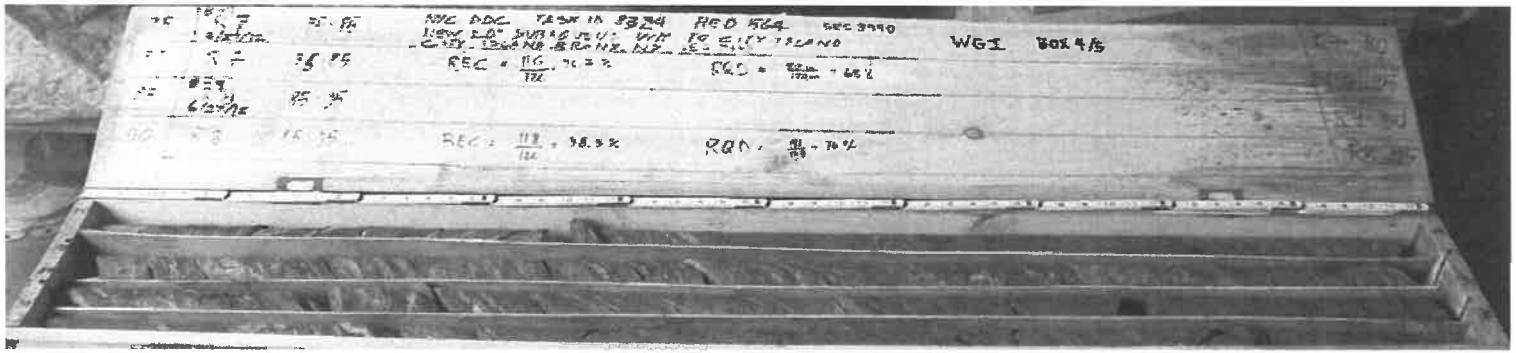
Site: Eastchester Bay (marine) SES # 3990						Box No.		3/5	
Task ID: 8324						Surface El. (ft)		-18.9	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-9	R-5	-73.9	-83.9	55	65	116	96.7	108	90.0
B-9	R-6	-83.9	-93.9	65	75	119	99.2	109	90.8



Rock Core Photograph: B-9, Box 3 of 5

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

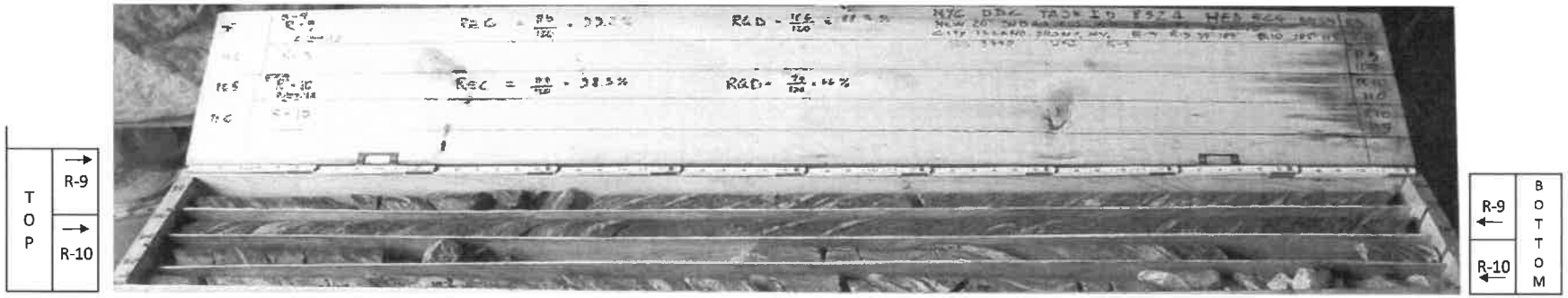
Site: Eastchester Bay (marine) SES # 3990						Box No.		4/5	
Task ID: 8324						Surface El. (ft)		-18.9	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-9	R-7	-93.9	-103.9	75	85	116	96.7	82	68
B-9	R-8	-103.9	-113.9	85	95	118	98.3	91	76



Rock Core Photograph: B-9, Box 4 of 5

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		5/5	
Task ID: 8324						Surface El. (ft)		-18.9	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-9	R-9	-113.9	-123.9	95	105	119	99.2	106	88.3
B-9	R-10	-123.9	-133.9	105	115	118	98.3	79	66



Rock Core Photograph: B-9, Box 5 of 5

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

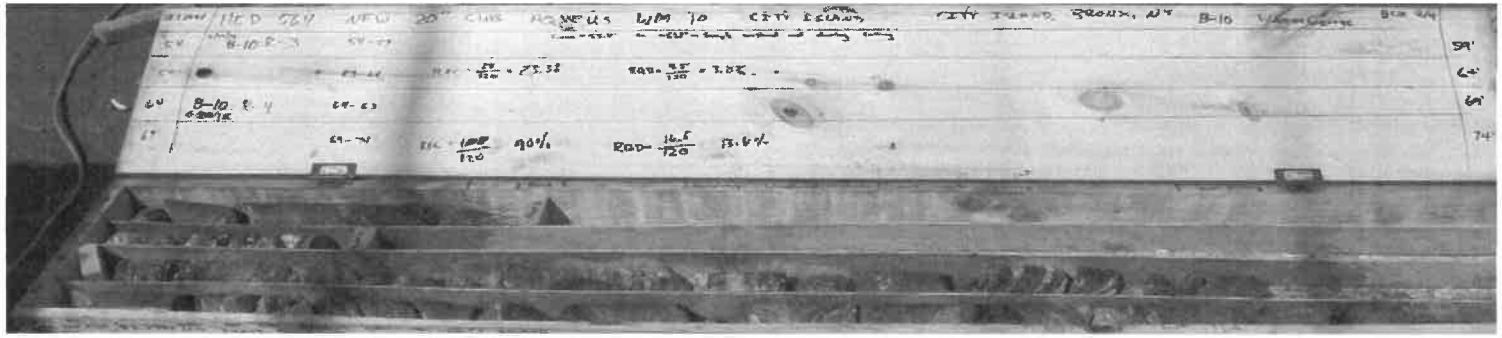
Site: Eastchester Bay (marine) SES # 3990						Box No.		1/4	
Task ID: 8324						Surface El. (ft)		-8.8	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-10	R-1	-42.8	-52.8	34	44	117	97.5	47	39
B-10	R-2	-52.8	-62.8	44	54	120	100	101	84.2



Rock Core Photograph: B-10, Box 1 of 4

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		2/4	
Task ID: 8324						Surface El. (ft)		-8.8	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-10	R-3	-62.8	-72.8	54	64	28	23.3	4.5	3.8
B-10	R-4	-72.8	-82.8	64	74	108	90	16.5	13.8



Rock Core Photograph: B-10, Box 2 of 4

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

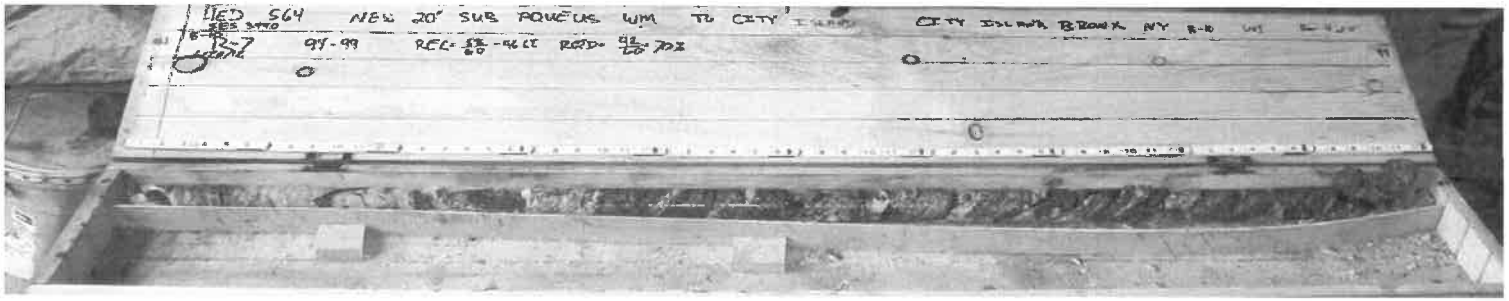
Site: Eastchester Bay (marine) SES # 3990						Box No.		3/4	
Task ID: 8324						Surface El. (ft)		-8.8	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-10	R-5	-82.8	-92.8	74	84	57.5	47.9	40	33.3
B-10	R-6	-92.8	-102.8	84	94	120	100	102	85



Rock Core Photograph: B-10, Box 3 of 4

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

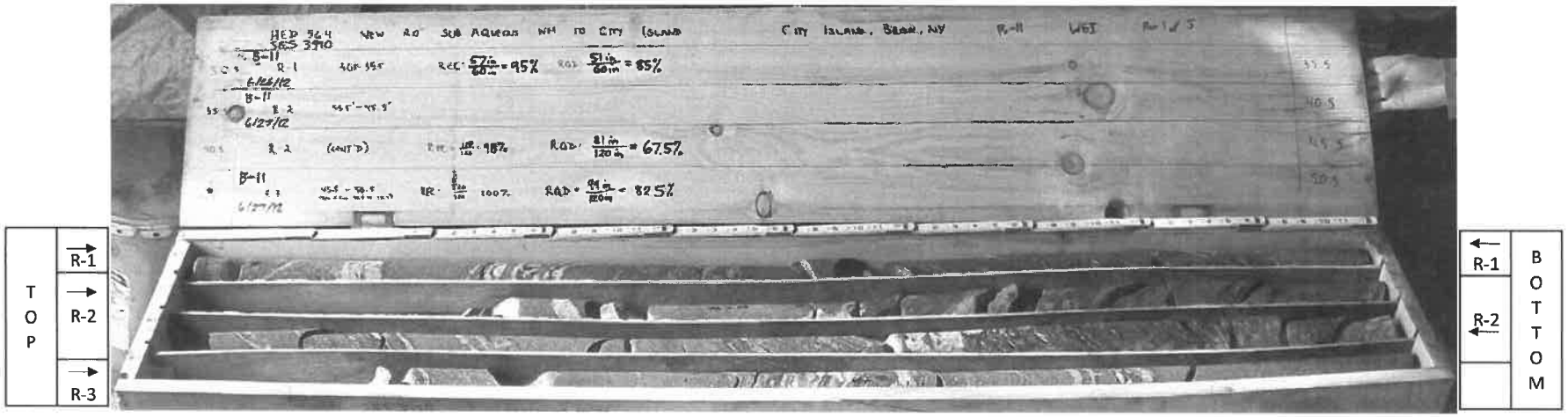
Site: Eastchester Bay (marine) SES # 3990						Box No.		4/4	
Task ID: 8324						Surface El. (ft)		-8.8	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-10	R-7	-102.8	-107.8	94	99	58	96.7	42	70



Rock Core Photograph: B-10, Box 4 of 4

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

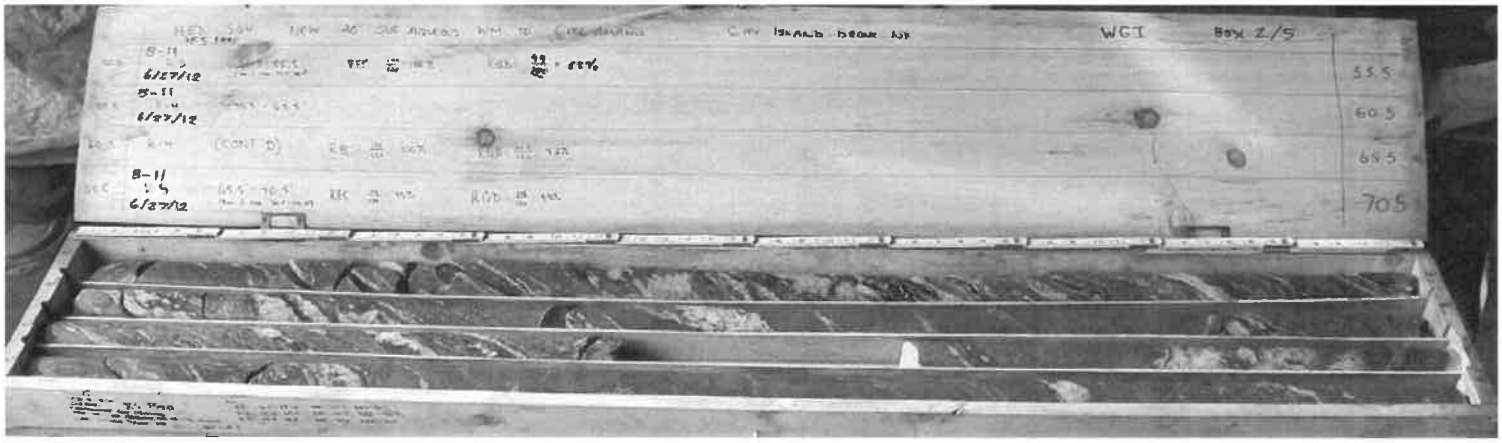
Site: City Island (land) SES # 3990						Box No.		1/5	
Task ID: 8324						Surface El. (ft)		10.1	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-11	R-1	-20.4	-25.4	30.5	35.5	57	95	51	85
B-11	R-2	-25.4	-35.4	35.5	45.5	119	99	81	67.5
B-11	R-3 (1)	-35.4	-40.4	45.5	50.5	120	100	99	82.5



Rock Core Photograph: B-11, Box 1 of 5

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: City Island (land) SES # 3990						Box No.		2/5	
Task ID: 8324						Surface El. (ft)		10.1	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-11	R-3 (2)	-40.4	-45.4	50.5	55.5	120	100	99	83
B-11	R-4	-45.4	-55.4	55.5	65.5	120	100	110.5	92
B-11	R-5 (1)	-55.4	-60.4	65.5	70.5	114	95	114	95



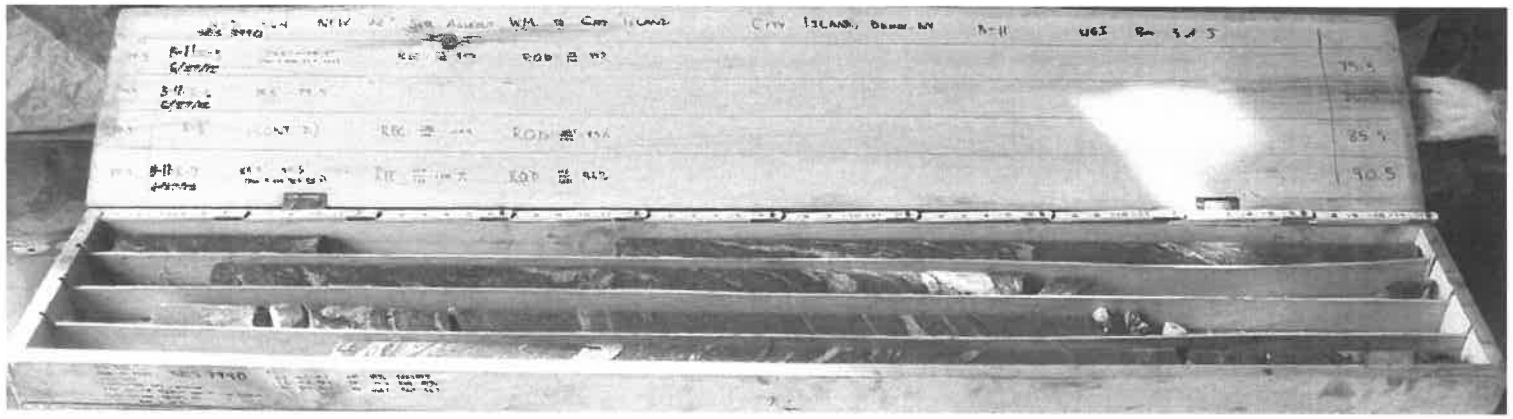
TOP → R-4 → R-5

R-3 ← R-4 ← BOTTOM

Rock Core Photograph: B-11, Box 2 of 5

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: City Island (land) SES # 3990						Box No.		3/5	
Task ID: 8324						Surface El. (ft)		10.1	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-11	R-5 (2)	-60.4	-65.4	70.5	75.5	114	95	114	95
B-11	R-6	-65.4	-75.4	75.5	85.5	120	100	102.5	85
B-11	R-7 (1)	-75.4	-80.4	85.5	90.5	120	100	112	93

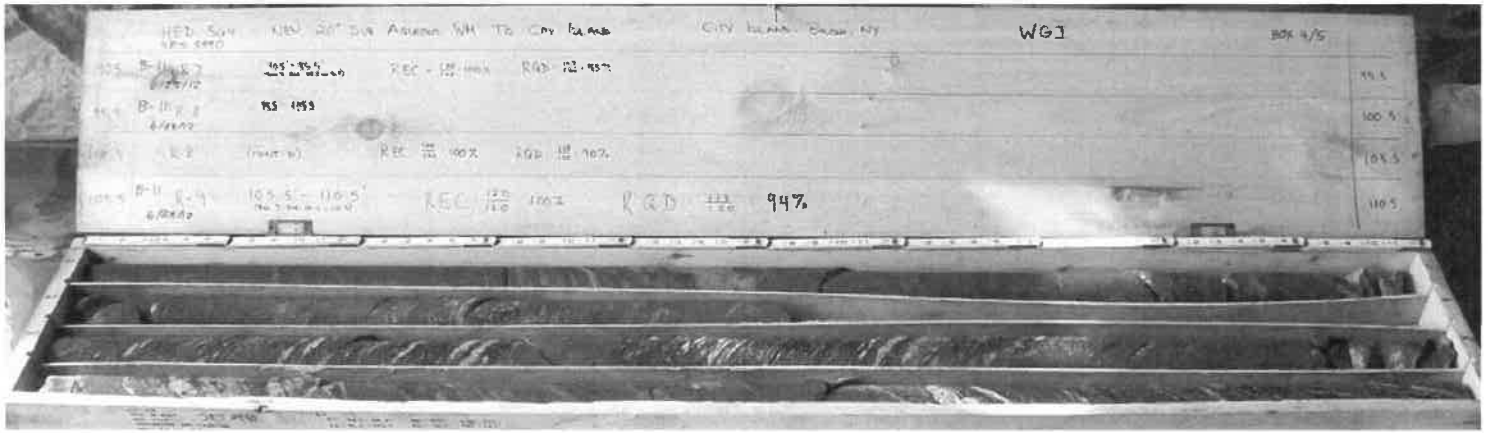


Rock Core Photograph: B-11, Box 3 of 5

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: City Island (land) SES # 3990						Box No.		4/5	
Task ID: 8324						Surface El. (ft)		10.1	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-11	R-7 (2)	-80.4	-85.4	90.5	95.5	120	100	112	93
B-11	R-8	-85.4	-95.4	95.5	105.5	120	100	108	90
B-11	R-9 (1)	-95.4	-100.4	105.5	110.5	120	100	113	94



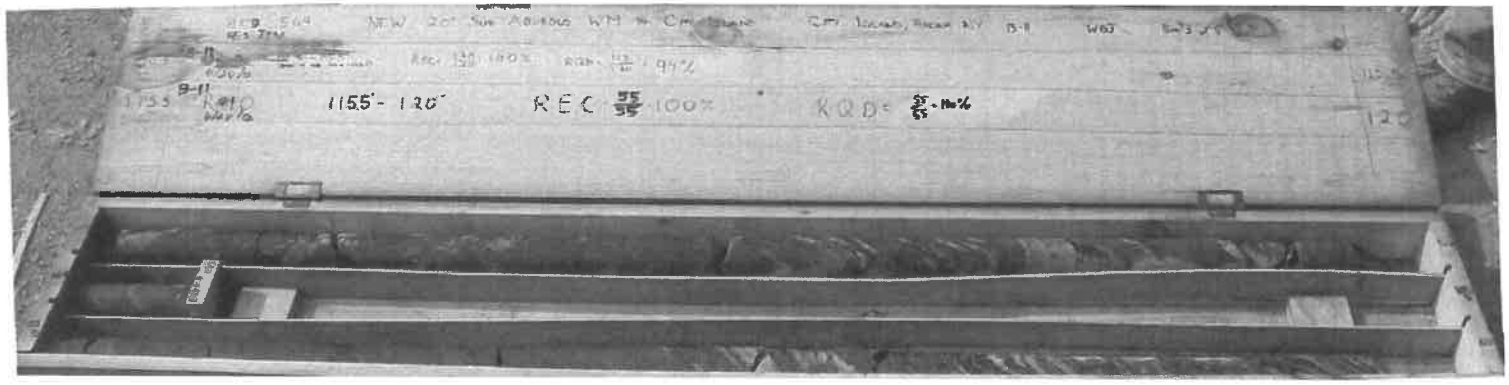
TOP
R-8
R-9

R-7
R-8
BOTTOM

Rock Core Photograph: B-11, Box 4 of 5

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: City Island (land) SES # 3990						Box No.		5/5	
Task ID: 8324						Surface El. (ft)		10.1	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-11	R-9 (2)	-100.4	-105.4	110.5	115.5	120	100	113	94
B-11	R-10	-105.4	-109.9	115.5	120	55	100	55	100



TOP → R-10

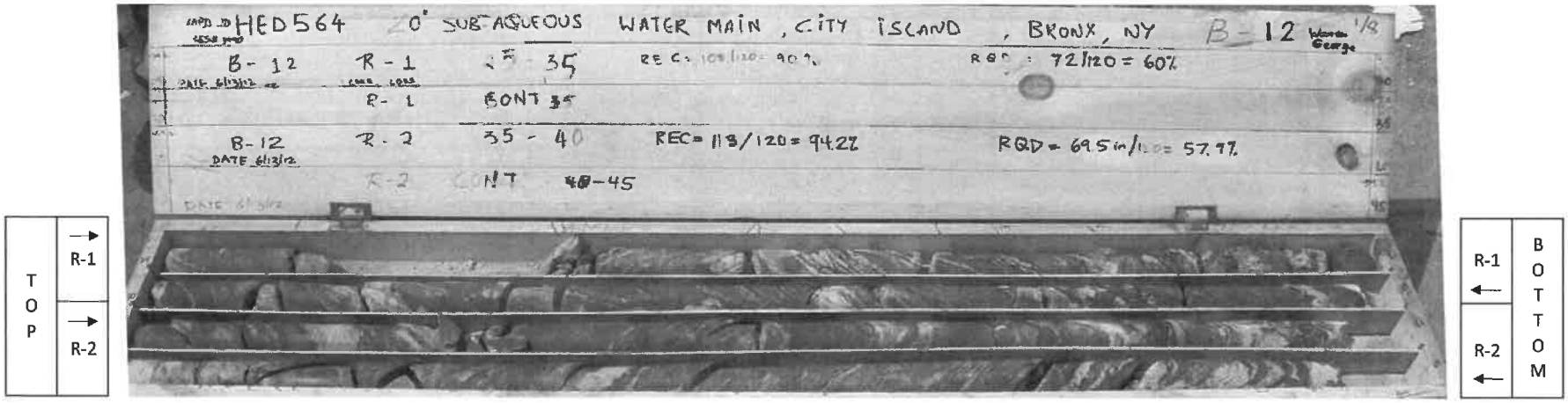
R-9 ← / R-10 ← BOTTOM

Rock Core Photograph: B-11, Box 5 of 5

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

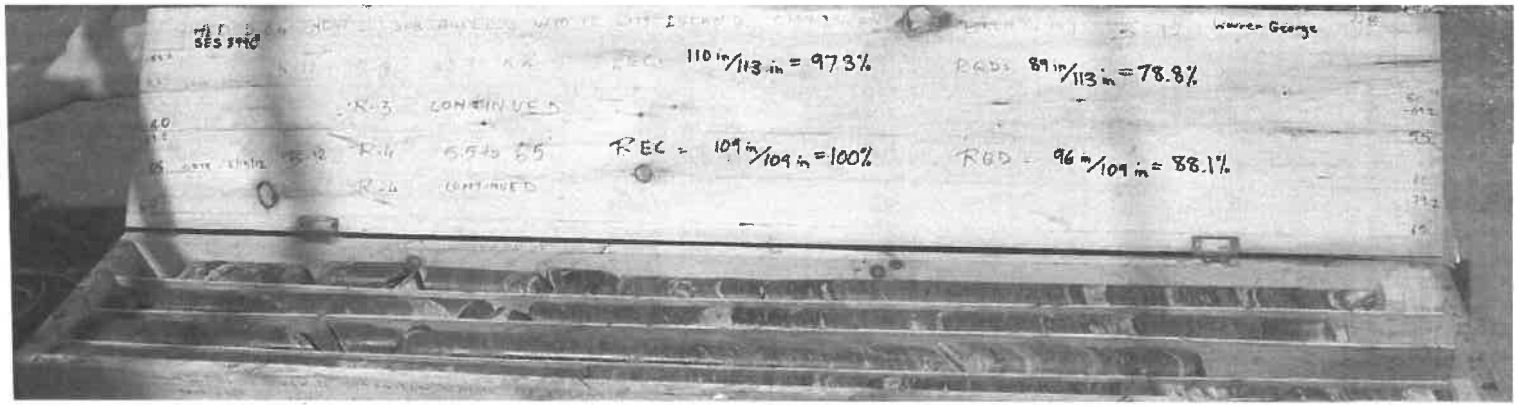
Site: Eastchester Bay (marine) SES # 3990						Box No.		1/8	
Task ID: 8324						Surface El. (ft)		-14.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-12	R-1	-39.2	-49.2	25	35	108	90	72	60
B-12	R-2	-49.2	-59.2	35	45	113	94.2	69.5	57.9



Rock Core Photograph: B-12, Box 1 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		2/8	
Task ID: 8324						Surface El. (ft)		-14.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-12	R-3	-59.2	-69.2	45	55	110	97.3	89	78.8
B-12	R-4	-69.2	-79.2	55	65	109	100	96	88.1



TOP → R-3 → R-4

R-3 ← R-4 ← BOTTOM

Rock Core Photograph: B-12, Box 2 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

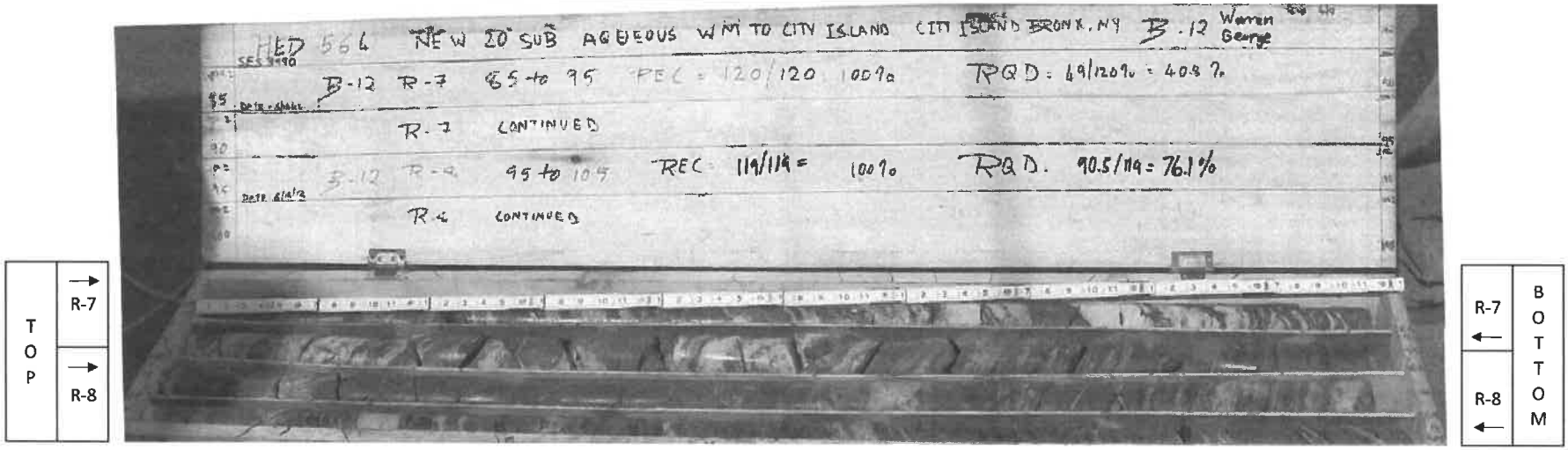
Site: Eastchester Bay (marine) SES # 3990						Box No.		3/8	
Task ID: 8324						Surface El. (ft)		-14.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-12	R-5	-79.2	-89.2	65	75	120	100	68	57
B-12	R-6	-89.2	-99.2	75	85	118	98	86	72



Rock Core Photograph: B-12, Box 3 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		4/8	
Task ID: 8324						Surface El. (ft)		-14.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-12	R-7	-99.2	-109.2	85	95	120	100	49	40.8
B-12	R-8	-109.2	-119.2	95	105	119	100	90.5	76.1



Rock Core Photograph: B-12, Box 4 of 8

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		5/8	
Task ID: 8324						Surface El. (ft)		-14.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-12	R-9	-119.2	-129.2	105	115	120	100	81	67.5
B-12	R-10	-129.2	-139.2	115	125	120	100	45	37.5



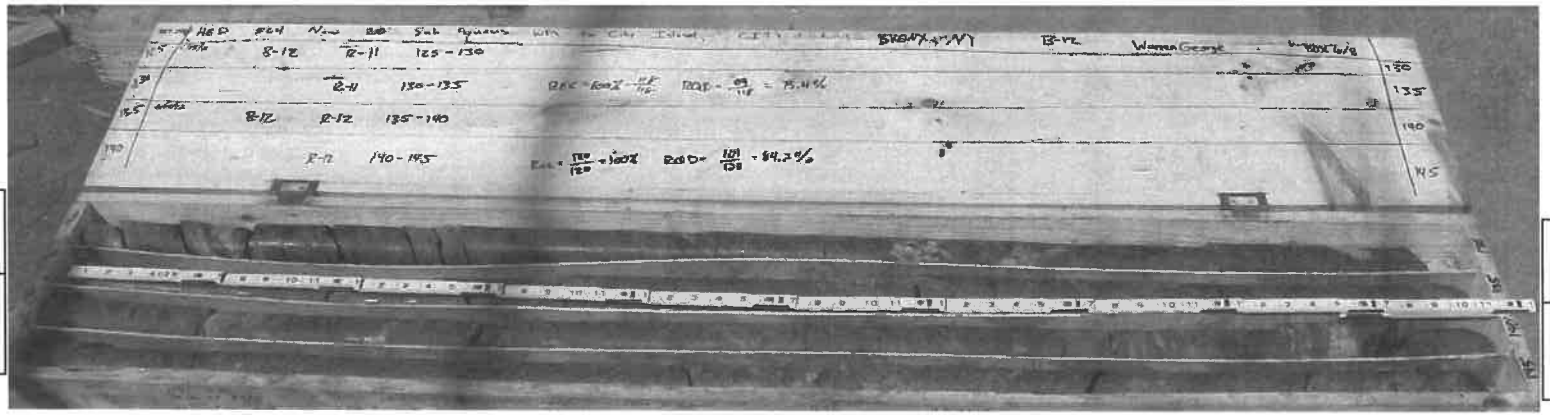
T O P — R-9 → / R-10 →

R-9 ← / R-10 ← — B O T T O M

Rock Core Photograph: B-12, Box 5 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

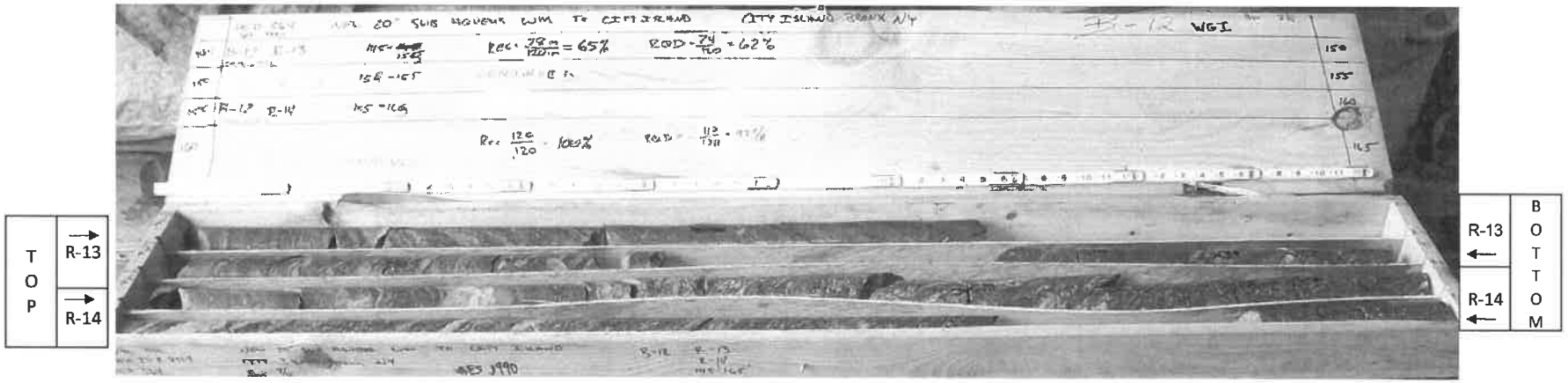
Site: Eastchester Bay (marine)		SES # 3990				Box No.		6/8	
Task ID: 8324						Surface El. (ft)		-14.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-12	R-11	-139.2	-149.2	125	135	118	100	89	75.4
B-12	R-12	-149.2	-159.2	135	145	120	100	101	84.2



Rock Core Photograph: B-12, Box 6 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

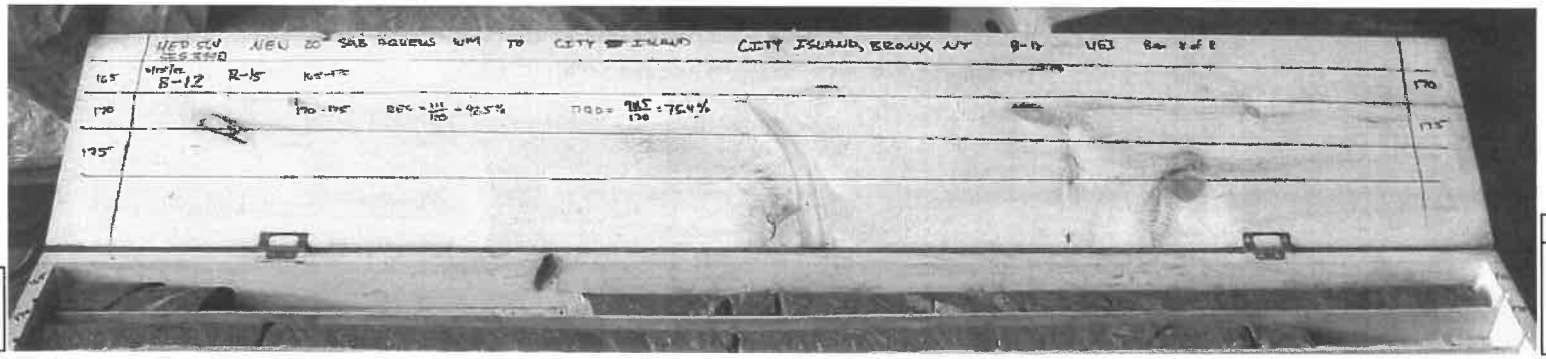
Site: Eastchester Bay (marine) SES # 3990						Box No.		7/8	
Task ID: 8324						Surface El. (ft)		-14.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-12	R-13	-159.2	-169.2	145	155	78	65	74	62
B-12	R-14	-169.2	-179.2	155	165	120	100	112	93



Rock Core Photograph: B-12, Box 7 of 8

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		8/8	
Task ID: 8324						Surface El. (ft)		-14.2	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-12	R-15	-179.2	-189.2	165	175	111	92.5	90.5	75.4



TOP → R-15

R-15 ← BOTTOM

Rock Core Photograph: B-12, Box 8 of 8

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

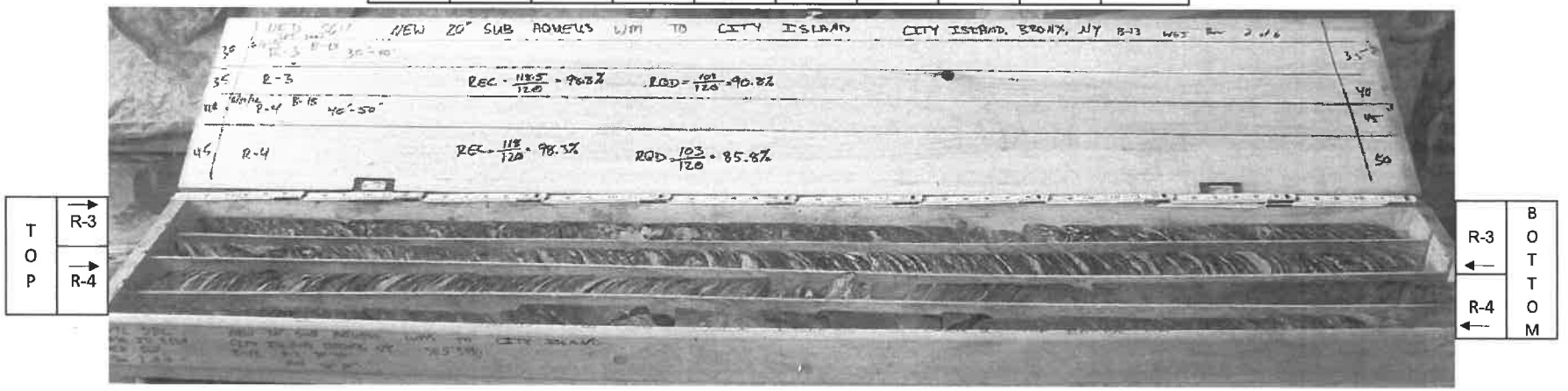
Site: Eastchester Bay (marine)		SES # 3990				Box No.		1/6	
Task ID: 8324						Surface El. (ft)		-11.7	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-13	R-1	-21.7	-31.7	10	20	110	91.7	62	51.7
B-13	R-2	-31.7	-41.7	20	30	104	86.7	96.5	80.4



Rock Core Photograph: B-13, Box 1 of 6

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		2/6	
Task ID: 8324						Surface El. (ft)		-11.7	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-13	R-3	-41.7	-51.7	30	40	118.5	98.8	109	90.8
B-13	R-4	-51.7	-61.7	40	50	118	98.3	103	85.8

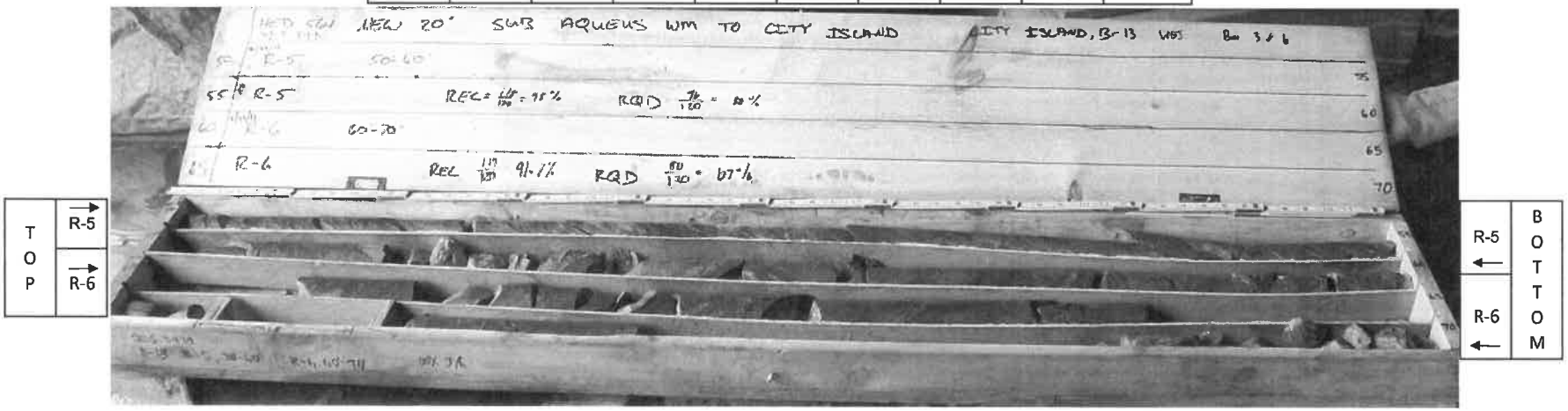


Rock Core Photograph: B-13, Box 2 of 6

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

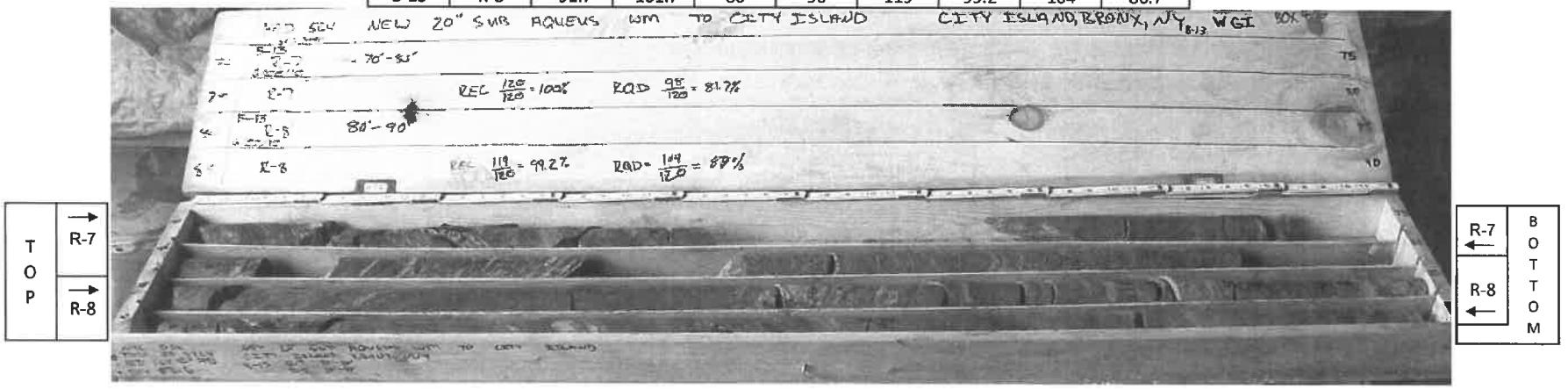
Site: Eastchester Bay (marine) SES # 3990						Box No.		3/6	
Task ID: 8324						Surface El. (ft)		-11.7	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-13	R-5	-61.7	-71.7	50	60	118	98	96	80
B-13	R-6	-71.7	-81.7	60	70	110	91.7	80	67



Rock Core Photograph: B-13, Box 3 of 6

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		4/6	
Task ID: 8324						Surface El. (ft)		-11.7	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-13	R-7	-81.7	-91.7	70	80	120	100	98	81.7
B-13	R-8	-91.7	-101.7	80	90	119	99.2	104	86.7

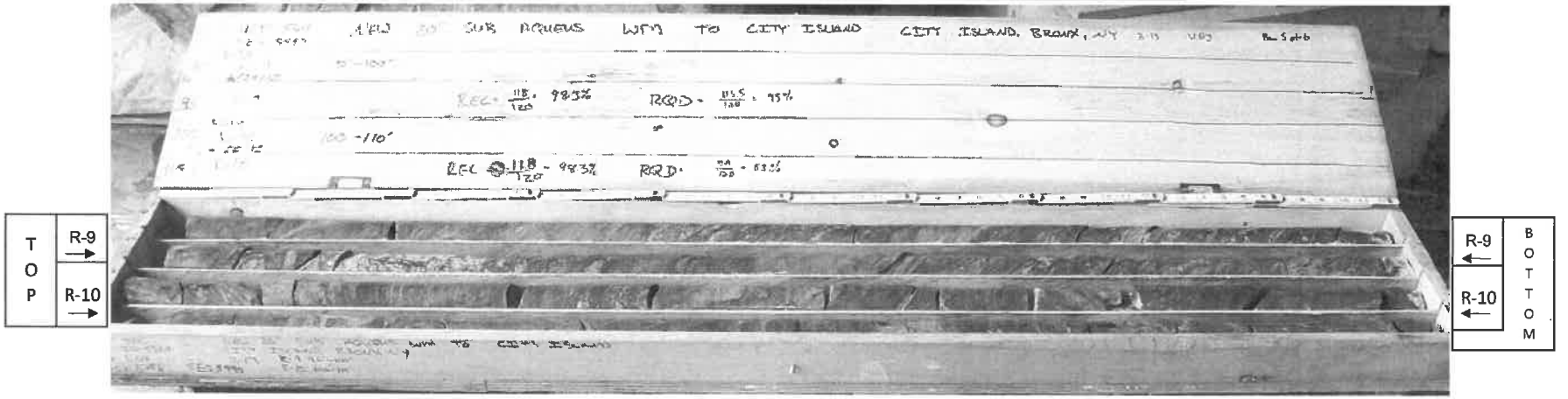


Rock Core Photograph: B-13, Box 4 of 6

CDM Smith

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

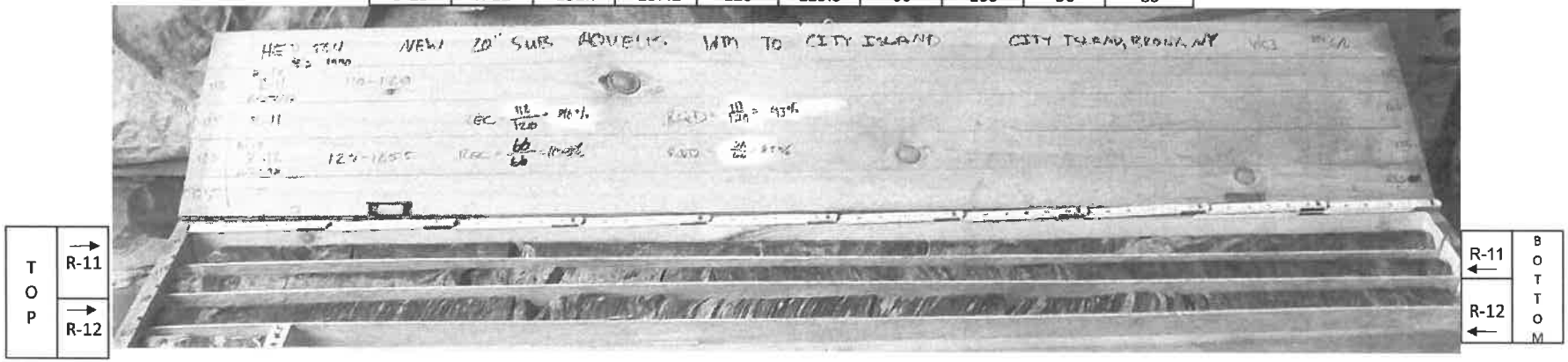
Site: Eastchester Bay (marine) SES # 3990						Box No.		5/6	
Task ID: 8324						Surface El. (ft)		-11.7	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-13	R-9	-101.7	-111.7	90	100	118	98.3	113.5	95
B-13	R-10	-111.7	-121.7	100	110	118	98.3	99	83



Rock Core Photograph: B-13, Box 5 of 6

New York City Department of Design and Construction
New 20-inch Sub Aqueous Water Main to City Island
Eastchester Bay Crossing (City Island Bridge)
Borough of The Bronx

Site: Eastchester Bay (marine) SES # 3990						Box No.		6/6	
Task ID: 8324						Surface El. (ft)		-11.7	
Boring	Sample No.	Elevation (ft)		Depth (ft)		Recovery		RQD	
		Top	Bottom	Top	Bottom	(in)	(%)	(in)	(%)
B-13	R-11	-121.7	-131.7	110	120	118	98	111	93
B-13	R-12	-131.7	-137.2	120	125.5	66	100	56	85



Rock Core Photograph: B-13, Box 6 of 6

CDM Smith

APPENDIX D

Packer Test Data

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-3

SHEET 1 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	8/9/2012
PROJECT NO.	HED 564	INSPECTOR	Eduardo Gutierez	RIG	Acker XLS
GROUND SURFACE EL.	19	DRILLER	Edwin Cardone	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	11.7	TYPE & MAKE OF PUMP	--	WEATHER	Cloudy
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	3	TYPE & MAKE OF WATER METER	Master Meter		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
8/9/2012	0	7968.5	89	99	23	-	-	
	1	7970.0	(El -70)	(El -80)		1.5	1.5	Packer pressure 200psi
	2	7971.0				1	1.0	
	5	7974.2				3.2	1.1	
	10	7979.0				4.8	1.0	
	15	7984.5				5.5	1.1	
8/9/2012	0	7991.5			45	-	-	
	1	7992.6				1.1	1.1	
	2	7995.0				2.4	2.4	
	5	8001.2				6.2	2.1	
	10	8006.7				5.5	1.1	
	15	8014.2				7.5	1.5	
	20	8020.4				6.2	1.2	
	25	8026.4				6	1.2	
8/9/2012	0	8029.5			90	-	-	
	1	8031.2				1.7	1.7	
	2	8032.5				1.3	1.3	
	5	8037.7				5.2	1.7	
	10	8047.3				9.6	1.9	
	15	8055.9				8.6	1.7	
8/9/2012	0	8066.4			45	-	-	
	1	8067.3				0.9	0.9	
	2	8068.8				1.5	1.5	
	5	8073.5				4.7	1.6	
	10	8082.4				8.9	1.8	
	15	8090.5				8.1	1.6	
8/9/2012	0	8098.7			23	-	-	
	1	8100.3				1.6	1.6	
	2	8101.9				1.6	1.6	
	5	8106.5				4.6	1.5	
	10	8114.4				7.9	1.6	
	15	8122.0				7.6	1.5	

Test Pressures: 0.4*(17ft soil) + 1.0*(82ft rock) = 89psi
Use 23, 45, 90, 45, 23psi pressure increments

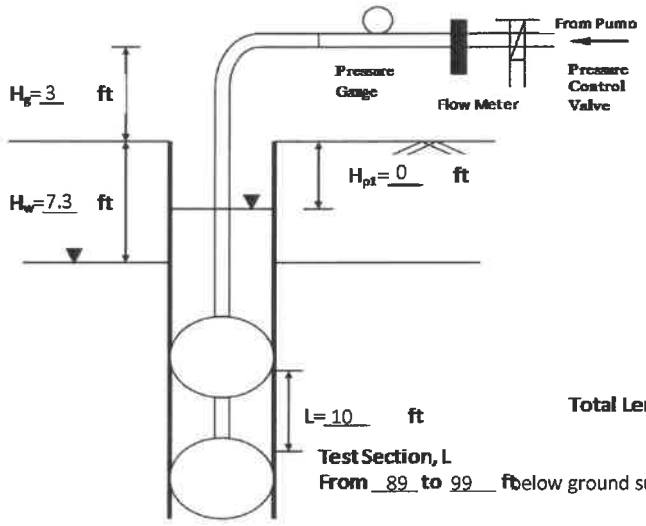
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-3

SHEET 2 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	8/9/2012
PROJECT NO.	HED 564	INSPECTOR	Eduardo Gutierez	RIG	Acker XLS
GROUND SURFACE EL.	19	DRILLER	Edwin Cardone	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	11.7	TYPE & MAKE OF PUMP	--	WEATHER	Cloudy
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	3	TYPE & MAKE OF WATER METER	Master Meter		

LOCATION:



Total Length of Rods and Packer Rods: 102 ft

Test Section, L
From 89 **to** 99 ft below ground surface

R= 2.94 in

1 psi = 2.31 ft of water

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-3

SHEET 3 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	8/9/2012
PROJECT NO.	HED 564	INSPECTOR	Eduardo Gutierez	RIG	Acker XLS
GROUND SURFACE EL.	19	DRILLER	Edwin Cardone	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	11.7	TYPE & MAKE OF PUMP	–	WEATHER	Cloudy
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	3	TYPE & MAKE OF WATER METER	Master Meter		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
8/9/2012	0	7893.0	99	109	25	-	-	
	1	7893.0	(El -80)	(El -90)		0	0.0	Packer pressure 200psi
	2	7893.3				0.3	0.3	
	5	7893.8				0.5	0.2	
	10	7894.6				0.8	0.2	
	15	7895.4				0.8	0.2	
8/9/2012	0	7896.9			50	-	-	
	1	7897.6				0.7	0.7	
	2	7898.4				0.8	0.8	
	5	7899.8				1.4	0.5	
	10	7902.4				2.6	0.5	
	15	7905.0				2.6	0.5	
8/9/2012	0	7909.5			100	-	-	
	1	7911.7				2.2	2.2	
	2	7912.7				1	1.0	
	5	7917.1				4.4	1.5	
	10	7924.3				7.2	1.4	
	15	7932.5				8.2	1.6	
	20	7939.8				7.3	1.5	
8/9/2012	0	7939.8			50	-	-	
	1	7940.5				0.7	0.7	
	2	7941.0				0.5	0.5	
	5	7942.8				1.8	0.6	
	10	7945.5				2.7	0.5	
	15	7948.7				3.2	0.6	
8/9/2012	0	7952.0			25	-	-	
	1	7952.0				0	0.0	
	2	7952.1				0.1	0.1	
	5	7952.3				0.2	0.1	
	10	7952.5				0.2	0.0	
	15	7952.7				0.2	0.0	
	20	7952.9				0.2	0.0	

Test Pressures: 0.4*(17ft soil) + 1.0*(92ft rock) = 99psi
Use 25, 50, 100, 50, 25psi pressure increments

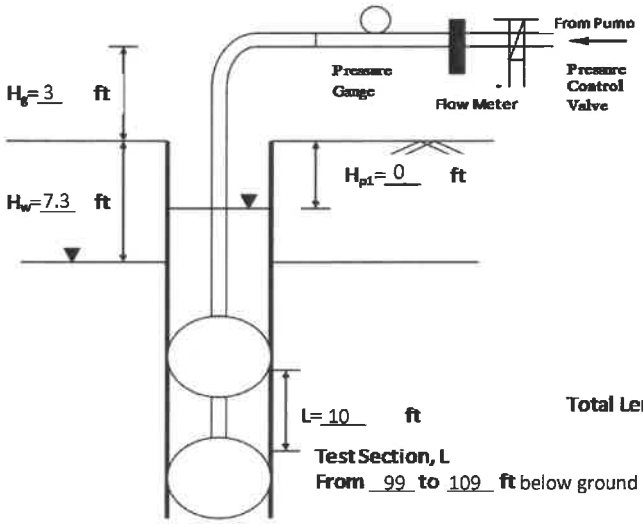
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-3

SHEET 4 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	8/9/2012
PROJECT NO.	HED 564	INSPECTOR	Eduardo Gutierez	RIG	Acker XLS
GROUND SURFACE EL.	19	DRILLER	Edwin Cardone	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	11.7	TYPE & MAKE OF PUMP	--	WEATHER	Cloudy
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	3	TYPE & MAKE OF WATER METER	Master Meter		

LOCATION:



Total Length of Rods and Packer Rods: 112 **ft**

Test Section, L
From 99 **to** 109 **ft** below ground surface

R= 2.94 **in**

1 psi = 2.31 ft of water

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-5

SHEET 1 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	8/21/2012
PROJECT NO.	HED 564	INSPECTOR	Andrew Thompson	RIG	Acker XLS
GROUND SURFACE EL.	5	DRILLER	Edwin Cardone	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	3	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	2	TYPE & MAKE OF WATER METER	Master Meter		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
8/21/2012	0	8265.3	75	85	22	-	-	
	1	8265.3	(El -70)	(El -80)		0.05	0.0	Packer pressure 200psi
	2	8265.3				0	0.0	
	5	8265.3				0	0.0	
8/21/2012	0	8265.3			45	-	-	
	1	8265.3				0	0.0	
	2	8265.3				0	0.0	
	5	8265.3				0	0.0	
8/21/2012	0	8265.5			90	-	-	
	1	8265.5				0	0.0	
	2	8265.5				0	0.0	
	5	8265.5				0	0.0	
8/21/2012	0	8265.4			45	-	-	
	1	8265.4				0	0.0	
	2	8265.4				0	0.0	
	5	8265.4				0	0.0	
8/21/2012	0	8265.4			22	-	-	
	1	8265.4				0	0.0	
	2	8265.4				0	0.0	
	5	8265.4				0	0.0	

Test Pressures: 0.4*(20ft soil) + 1.0*(80ft rock) = 88psi
Use 22, 45, 90, 45, 22psi pressure increments

* - ground surface was estimated from surrounding features

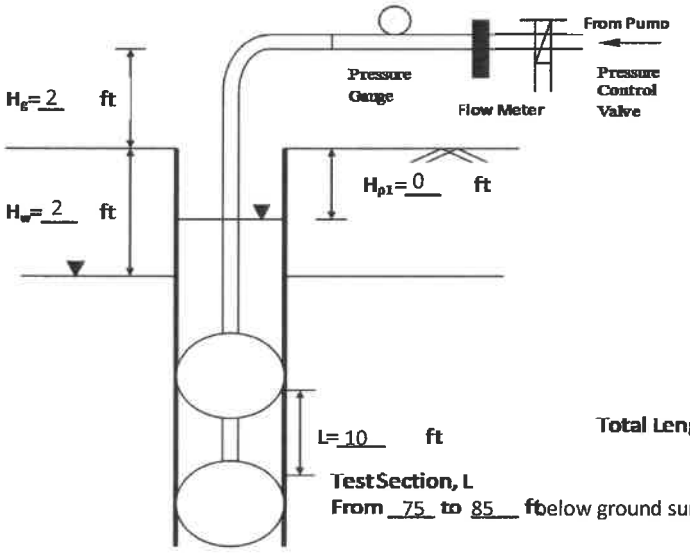
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-5

SHEET 2 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	8/21/2012
PROJECT NO.	HED 564	INSPECTOR	Andrew Thompson	RIG	Acker XLS
GROUND SURFACE EL.	5	DRILLER	Edwin Cardone	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	3	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	2	TYPE & MAKE OF WATER METER	Master Meter		

LOCATION:



Total Length of Rods and Packer Rods: 87 ft

Test Section, L
From 75 **to** 85 **ft** below ground surface

R= 2.94 **in**

1 psi = 2.31 ft of water

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-5

SHEET 3 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	8/21/2012
PROJECT NO.	HED 564	INSPECTOR	Andrew Thompson	RIG	Acker XLS
GROUND SURFACE EL.	5	DRILLER	Edwin Cardone	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	3	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	2	TYPE & MAKE OF WATER METER	Master Meter		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
8/21/2012	0	8143.5	85	95	25	-	-	
	1	8144.0	(El -80)	(El -90)		0.5	0.5	Packer pressure 200psi
	2	8144.3				0.3	0.3	
	5	8145.2				0.9	0.3	
	10	8146.5				1.3	0.3	
8/21/2012	0	8147.3			50	-	-	
	1	8149.0				1.7	1.7	
	2	8150.2				1.2	1.2	
	5	8153.0				2.8	0.9	
	10	8157.6				4.6	0.9	
	15	8162.5				4.9	1.0	
8/21/2012	0	8222.5			100	-	-	
	1	8226.0				3.5	3.5	
	2	8229.6				3.6	3.6	
	5	8239.4				9.8	3.3	
8/21/2012	0	8243.9			50	-	-	
	1	8245.5				1.6	1.6	
	2	8247.1				1.6	1.6	
	5	8252.0				4.9	1.6	
8/21/2012	0	8252.8			25	-	-	
	1	8253.6				0.8	0.8	
	2	8254.5				0.9	0.9	
	5	8257.2				2.7	0.9	

Test Pressures: 0.4*(20ft soil) + 1.0*(90ft rock) = 98psi
Use 25, 50, 100, 50, 25psi pressure increments

* - ground surface was estimated from surrounding features

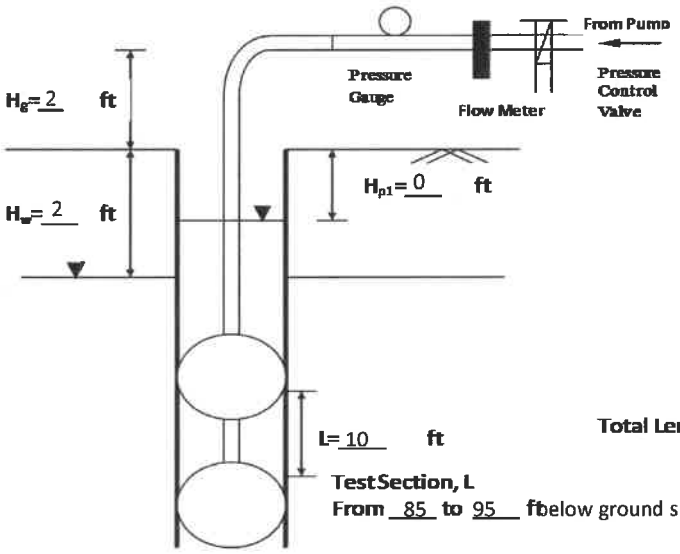
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-5

SHEET 4 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	8/21/2012
PROJECT NO.	HED 564	INSPECTOR	Andrew Thompson	RIG	Acker XLS
GROUND SURFACE EL.	5	DRILLER	Edwin Cardone	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	3	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	2	TYPE & MAKE OF WATER METER	Master Meter		

LOCATION:



Total Length of Rods and Packer Rods: 97 ft

Test Section, L
From 85 **to** 95 **ft** below ground surface

R= 2.94 **in**

1 psi = 2.31 ft of water

Use 25, 50, 100, 50, 25psi pressure increments

* - ground surface was estimated from surrounding features

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-6

SHEET 1 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	7/11/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Mobile B-58
GROUND SURFACE EL.	-13.4	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Cloudy
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	23	TYPE & MAKE OF WATER METER	Neptune T-10		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
7/11/2012	0	7343.6	57	67	15	-	-	
	1	7343.7	(El -70)	(El -80)		0.1	0.1	Packer pressure 200psi
	2	7343.7				0	0.0	
	5	7343.7				0	0.0	
	10	7343.7				0	0.0	
7/11/2012	0	7343.7			30	-	-	
	1	7343.8				0.1	0.1	
	2	7343.8				0	0.0	
	5	7343.8				0	0.0	
	10	7343.9				0.1	0.0	
7/11/2012	0	7344.0			60	-	-	
	1	7344.1				0.1	0.1	
	2	7344.2				0.1	0.1	
	5	7344.5				0.3	0.1	
	10	7344.9				0.4	0.1	
	15	7345.3				0.4	0.1	
7/11/2012	0	7345.3			30	-	-	
	1	7345.3				0	0.0	
	2	7345.3				0	0.0	
	5	7345.4				0.1	0.0	
	10	7345.5				0.1	0.0	
	15	7345.6				0.1	0.0	
7/11/2012	0	7345.6			15	-	-	
	1	7345.6				0	0.0	
	2	7345.6				0	0.0	
	5	7345.6				0	0.0	
	10	7345.6				0	0.0	
	15	7345.6				0	0.0	

Test Pressures: 0.4*(15ft soil) + 1.0*(52ft rock) = 58psi
Use 15, 30, 60, 30, 15psi pressure increments

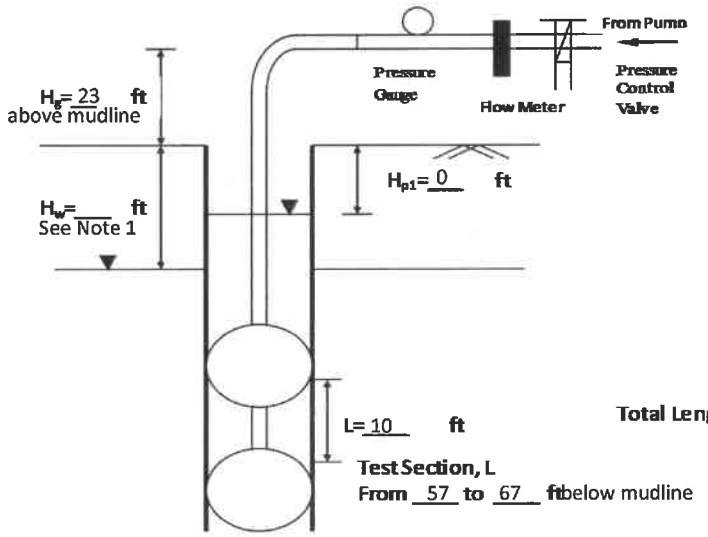
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-6

SHEET 2 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	7/11/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Mobile B-58
GROUND SURFACE EL.	-13.4	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Cloudy
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	23	TYPE & MAKE OF WATER METER	Neptune T-10		

LOCATION



Total Length of Rods and Packer Rods: 90 ft

1 psi = 2.31 ft of water

Test performed over water, working from a barge.

Note 1: Approximate water depth, from water surface to mudline, was 15 feet.

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-6

SHEET 3 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	7/11/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Mobile B-58
GROUND SURFACE EL.	-13.4	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Cloudy
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	23	TYPE & MAKE OF WATER METER	Neptune T-10		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
7/11/2012	0	7195.8	67	77	17	-	-	
	1	7197.0	(El -80)	(El -90)		1.2	1.2	Packer pressure 200psi
	2	7198.3				1.3	1.3	
	5	7202.0				3.7	1.2	
	10	7207.1				5.1	1.0	
	15	7212.4				5.3	1.1	
	20	7217.9				5.5	1.1	
7/11/2012	0	7219.6			34	-	-	
	1	7221.4				1.8	1.8	
	2	7223.2				1.8	1.8	
	5	7228.7				5.5	1.8	
	10	7237.3				8.6	1.7	
	15	7246.1				8.8	1.8	
7/11/2012	0	7247.7			68	-	-	
	1	7251.2				3.5	3.5	
	2	7254.1				2.9	2.9	
	5	7262.8				8.7	2.9	
	10	7277.2				14.4	2.9	
	15	7291.9				14.7	2.9	
7/11/2012	0	7293.2			34	-	-	
	1	7295.0				1.8	1.8	
	2	7296.8				1.8	1.8	
	5	7302.2				5.4	1.8	
	10	7311.1				8.9	1.8	
	15	7320.0				8.9	1.8	
7/11/2012	0	7321.1			17	-	-	
	1	7322.4				1.3	1.3	
	2	7323.5				1.1	1.1	
	5	7327.0				3.5	1.2	
	10	7333.2				6.2	1.2	
	15	7339.2				6	1.2	

Test Pressures: 0.4*(15ft soil) + 1.0*(62ft rock) = 68psi
Use 17, 34, 68, 34, 17psi pressure increments

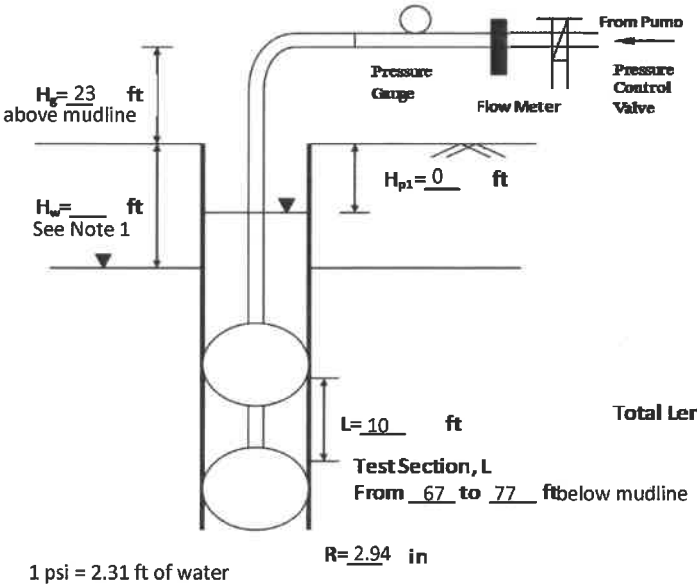
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-6

SHEET 4 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	7/11/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Mobile B-58
GROUND SURFACE EL.	-13.4	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Cloudy
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	23	TYPE & MAKE OF WATER METER	Neptune T-10		

LOCATION



Total Length of Rods and Packer Rods: 100 ft

1 psi = 2.31 ft of water

Test performed over water, working from a barge.

Note 1: Approximate water depth, from water surface to mudline, was 15 feet.

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-7

SHEET 1 of 4

PROJECT	New 20" Sub Aquous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	7/5/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Acker XLS
GROUND SURFACE EL.	-13.2	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	25	TYPE & MAKE OF WATER METER	Neptune T-10		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
7/5/2012	0	7138.1	57	67	15	-	-	
	1	7138.8	(El -70)	(El -80)		0.7	0.7	Packer pressure 200psi
	2	7139.4				0.6	0.6	
	5	7140.8				1.4	0.5	
	10	7142.7				1.9	0.4	
	15	7144.4				1.7	0.3	
	20	7145.9				1.5	0.3	
7/5/2012	0	7146.4			30	-	-	
	1	7147.1				0.7	0.7	
	2	7147.8				0.7	0.7	
	5	7149.9				2.1	0.7	
	10	7153.2				3.3	0.7	
	15	7156.2				3	0.6	
7/5/2012	0	7156.7			60	-	-	
	1	7158.3				1.6	1.6	
	2	7159.8				1.5	1.5	
	5	7163.8				4	1.3	
	10	7170.7				6.9	1.4	
	15	7177.3				6.6	1.3	
7/5/2012	0	7178.0			30	-	-	
	1	7178.8				0.8	0.8	
	2	7179.7				0.9	0.9	
	5	7182.0				2.3	0.8	
	10	7185.3				3.3	0.7	
	15	7188.8				3.5	0.7	
7/5/2012	0	7189.2			15	-	-	
	1	7189.6				0.4	0.4	
	2	7190.1				0.5	0.5	
	5	7191.4				1.3	0.4	
	10	7193.4				2	0.4	
	15	7195.4				2	0.4	

Test Pressures: 0.4*(15ft soil) + 1.0*(52ft rock) = 58psi
Use 15, 30, 60, 30, 15psi pressure increments

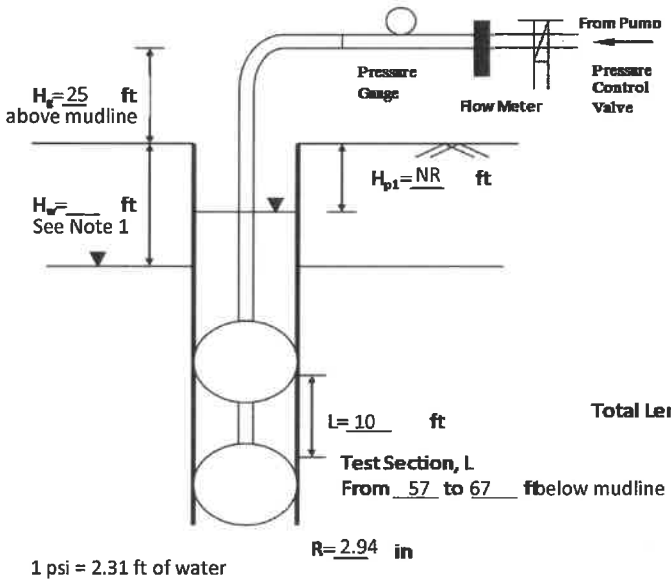
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-7

SHEET 2 of 4

PROJECT	New 20" Sub Aquous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	7/5/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Acker XLS
GROUND SURFACE EL.	-13.2	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	25	TYPE & MAKE OF WATER METER	Neptune T-10		

LOCATION:



Total Length of Rods and Packer Rods: 92 ft

1 psi = 2.31 ft of water

Test performed over water, working from a barge.

Note 1: Approximate water depth, from water surface to mudline, was 15 feet.

NR = Not Recorded

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-7

SHEET 3 of 4

PROJECT	New 20" Sub Aquous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	7/5/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Acker XLS
GROUND SURFACE EL.	-13.2	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	25	TYPE & MAKE OF WATER METER	Neptune T-10		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (FT.)	DEPTH TO BOTTOM (FT.)				
7/5/2012	0	6994.0	67	77	17	-	-	
	1	6996.6	(El -80)	(El -90)		2.6	2.6	Packer pressure 200psi
	2	6997.9				1.3	1.3	
	5	7001.8				3.9	1.3	
	10	7007.3				5.5	1.1	
	15	7012.3				5	1.0	
	20	7016.8				4.5	0.9	
7/5/2012	0	7017.8			34	-	-	
	1	7020.0				2.2	2.2	
	2	7022.0				2	2.0	
	5	7027.4				5.4	1.8	
	10	7035.9				8.5	1.7	
	15	7044.4				8.5	1.7	
7/5/2012	0	7045.5			68	-	-	
	1	7049.6				4.1	4.1	
	2	7052.9				3.3	3.3	
	5	7062.6				9.7	3.2	
	10	7077.9				15.3	3.1	
	15	7093.2				15.3	3.1	
7/5/2012	0	7095.0			34	-	-	
	1	7097.1				2.1	2.1	
	2	7099.0				1.9	1.9	
	5	7104.5				5.5	1.8	
	10	7113.1				8.6	1.7	
	15	7121.4				8.3	1.7	
7/5/2012	0	7122.4			17	-	-	
	1	7123.5				1.1	1.1	
	2	7124.5				1	1.0	
	5	7127.6				3.1	1.0	
	10	7132.6				5	1.0	
	15	7137.4				4.8	1.0	

Test Pressures: 0.4*(15ft soil) + 1.0*(62ft rock) = 68psi
Use 17, 34, 68, 34, 17psi pressure increments

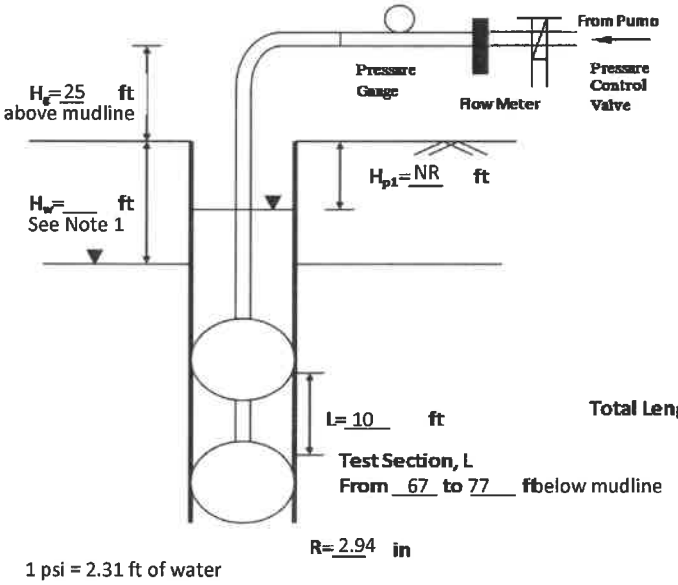
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-7

SHEET 4 of 4

PROJECT	New 20" Sub Aquous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	7/5/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Acker XLS
GROUND SURFACE EL.	-13.2	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	25	TYPE & MAKE OF WATER METER	Neptune T-10		

LOCATION:



Total Length of Rods and Packer Rods: 102 ft

1 psi = 2.31 ft of water

Test performed over water, working from a barge.

Note 1: Approximate water depth, from water surface to mudline, was 15 feet.

NR = Not Recorded

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-9

SHEET 1 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/28/2012
PROJECT NO.	HED 564	INSPECTOR	Max Rolandi	RIG	Mobile B-58
GROUND SURFACE EL.	-18.9	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	17	TYPE & MAKE OF WATER METER	Neptune T-10		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
6/28/2012	0	6991.9	51	61	13	-	-	
	1	6991.9	(El -70)	(El -80)		0	0.0	Packer pressure 200psi
	2	6991.9				0	0.0	
	5	6992.0				0.05	0.0	
	10	6992.0				0.05	0.0	
	15	6992.0				0	0.0	
6/28/2012	0	6992.2			26	-	-	
	1	6992.3				0.05	0.1	
	2	6992.3				0.05	0.1	
	5	6992.3				0	0.0	
	10	6992.4				0.05	0.0	
	15	6992.5				0.1	0.0	
6/28/2012	0	6992.9			52	-	-	
	1	6992.9				0	0.0	
	2	6993.0				0.1	0.1	
	5	6993.1				0.05	0.0	
	10	6993.2				0.15	0.0	
	15	6993.4				0.2	0.0	
6/28/2012	0	6993.8			26	-	-	
	1	6993.8				0	0.0	
	2	6993.8				0	0.0	
	5	6993.8				0	0.0	
	10	6994.0				0.2	0.0	
	15	6994.0				0	0.0	
6/28/2012	0	6994.0			13	-	-	
	1	6994.0				0	0.0	
	2	6994.0				0	0.0	
	5	6994.0				0	0.0	
	10	6994.0				0	0.0	
	15	6994.0				0	0.0	

Test Pressures: 0.4*(15ft soil) + 1.0*(46ft rock) = 52psi
Use 13, 26, 52, 26, 13psi pressure increments

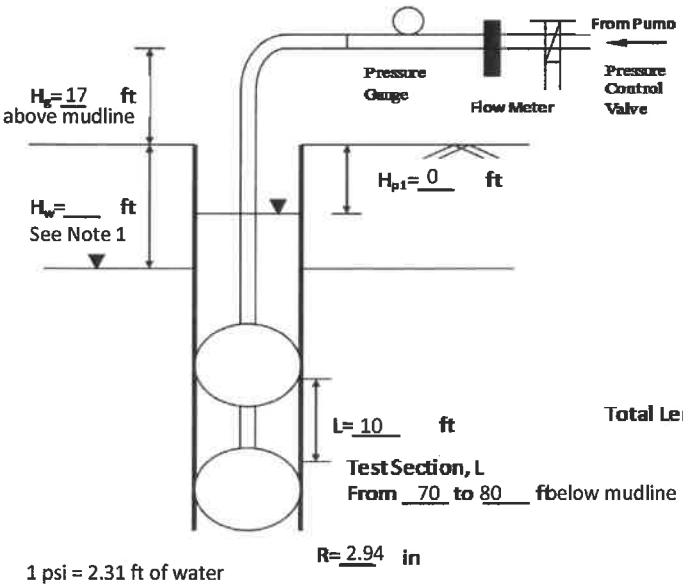
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-9

SHEET 2 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/28/2012
PROJECT NO.	HED 564	INSPECTOR	Max Rolandi	RIG	Mobile B-58
GROUND SURFACE EL.	-18.9	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	17	TYPE & MAKE OF WATER METER	Neptune T-10		

LOCATION



Total Length of Rods and Packer Rods: 97 ft

1 psi = 2.31 ft of water

Test performed over water, working from a barge.

Note 1: Approximate water depth, from water surface to mudline, was 6 feet.

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-9

SHEET 3 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/28/2012
PROJECT NO.	HED 564	INSPECTOR	Max Rolandi	RIG	Mobile B-58
GROUND SURFACE EL.	-18.9	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	17	TYPE & MAKE OF WATER METER	Neptune T-10		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
6/28/2012	0	6992.0	61	71	16	-	-	
	1	6992.0	(El -80)	(El -90)		0	0.0	Packer pressure 200psi
	2	6992.0				0	0.0	
	5	6992.0				0	0.0	
	10	6992.0				0	0.0	
	15	6992.0				0	0.0	
6/28/2012	0	6992.0			32	-	-	
	1	6992.0				0	0.0	
	2	6992.0				0	0.0	
	5	6992.0				0	0.0	
	10	6992.0				0	0.0	
	15	6992.05				0.05	0.0	
6/28/2012	0	6992.1			62	-	-	
	1	6992.1				0	0.0	
	2	6992.15				0.05	0.0	
	5	6992.2				0.05	0.0	
	10	6992.3				0.1	0.0	
	15	6992.4				0.1	0.0	
6/28/2012	0	6992.6			32	-	-	
	1	6992.6				0	0.0	
	2	6992.6				0	0.0	
	5	6992.6				0	0.0	
	10	6992.6				0	0.0	
	15	6992.6				0	0.0	
6/28/2012	0	6992.7			16	-	-	
	1	6992.7				0	0.0	
	2	6992.7				0	0.0	
	5	6992.7				0	0.0	
	10	6992.7				0	0.0	
	15	6992.7				0	0.0	

Test Pressures: 0.4*(15ft soil) + 1.0*(56ft rock) = 62psi
Use 16, 32, 62, 32, 16psi pressure increments

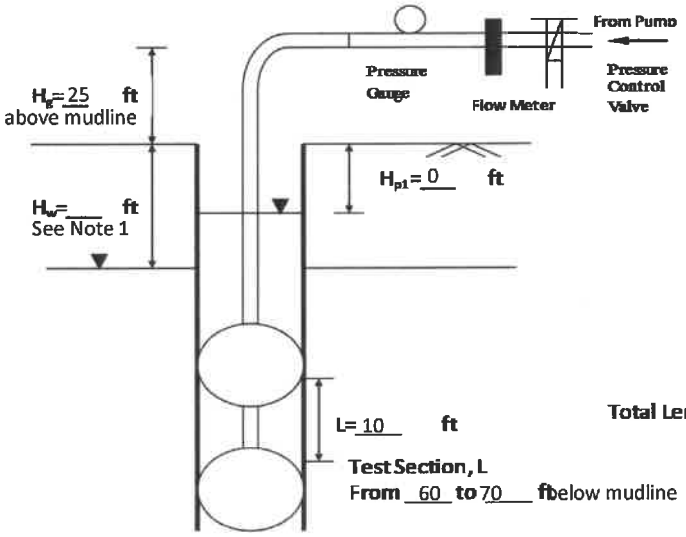
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-9

SHEET 4 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/28/2012
PROJECT NO.	HED 564	INSPECTOR	Max Rolandi	RIG	Mobile B-58
GROUND SURFACE EL.	-18.9	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	17	TYPE & MAKE OF WATER METER	Neptune T-10		

LOCATION



Total Length of Rods and Packer Rods: 95 ft

1 psi = 2.31 ft of water

Test performed over water, working from a barge.

Note 1: Approximate water depth, from water surface to mudline, was 17 feet.

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-11

SHEET 1 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/29/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Acker XLS
GROUND SURFACE EL.	10.1	DRILLER	Greg Williams	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	0.9	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	4	TYPE & MAKE OF WATER METER	Master Meter		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
6/29/2012	0	29.0	80	90	18	-	-	
	1	34.3	(El -90)	(El -100)		5.3	5.3	Packer pressure 200psi
	2	40.2				5.9	5.9	
	5	57.2				17	5.7	
	10	86.4				29.2	5.8	
6/29/2012	0	92.6			36	-	-	
	1	104.4				11.8	11.8	
	2	114.9				10.5	10.5	
	5	147.4				32.5	10.8	
	10	201.9				54.5	10.9	
6/29/2012	0	164.3			72	-	-	
	1	184.3				20	20.0	
	2	203.1				18.8	18.8	
	5	261.1				58	19.3	
	10	357.1				96	19.2	
6/29/2012	0	364.1			36	-	-	
	1	381.8				17.7	17.7	
	2	397.1				15.3	15.3	
	5	445.5				48.4	16.1	
	10	525.5				80	16.0	
6/29/2012	0	530.5			18	-	-	
	1	540.4				9.9	9.9	
	2	548.5				8.1	8.1	
	5	575.5				27	9.0	
	10	619.5				44	8.8	

Test Pressures: 0.4*(30.5ft soil) + 1.0*(59.5ft rock) = 71.7psi
Use 18, 36, 72, 36, 18psi pressure increments

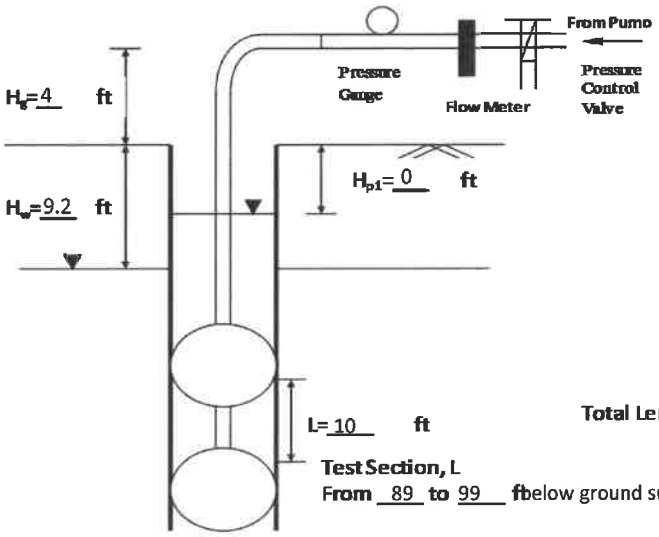
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-11

SHEET 2 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/29/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Acker XLS
GROUND SURFACE EL.	10.1	DRILLER	Greg Williams	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	0.9	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	4	TYPE & MAKE OF WATER METER	Master Meter		

LOCATION



Total Length of Rods and Packer Rods: 103 ft

Test Section, L
From 89 **to** 99 **f**below ground surface

1 psi = 2.31 ft of water

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-11

SHEET 3 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/29/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Acker XLS
GROUND SURFACE EL.	10.1	DRILLER	Greg Williams	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	0.9	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	4	TYPE & MAKE OF WATER METER	Master Meter		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
6/29/2012	0	7.5	90	100	20	-	-	
	1	8.5	(El -100)	(El -110)		1	1.0	Packer pressure 200psi
	2	8.5				0	0.0	
	5	9.0				0.5	0.2	
	10	9.0				0	0.0	
	15	9.0				0	0.0	
6/29/2012	0	9.0			40	-	-	
	1	9.5				0.5	0.5	
	2	9.5				0	0.0	
	5	10.0				0.5	0.2	
	10	11.0				1	0.2	
	15	11.0				0	0.0	
	20	11.0				0	0.0	
	25	11.0				0	0.0	
6/29/2012	0	11.0			80	-	-	
	1	12.0				1	1.0	
	2	12.5				0.5	0.5	
	5	14.5				2	0.7	
	10	17.5				3	0.6	
	15	21.0				3.5	0.7	
6/29/2012	0	21.5			40	-	-	
	1	21.7				0.2	0.2	
	2	21.9				0.2	0.2	
	5	22.7				0.8	0.3	
	10	23.9				1.2	0.2	
6/29/2012	0	25.0			20	-	-	
	1	25.0				0	0.0	
	2	25.0				0	0.0	
	5	25.0				0	0.0	

Test Pressures: 0.4*(30.5ft soil) + 1.0*(69.5ft rock) = 81.7psi
Use 20, 40, 80, 40, 20psi pressure increments

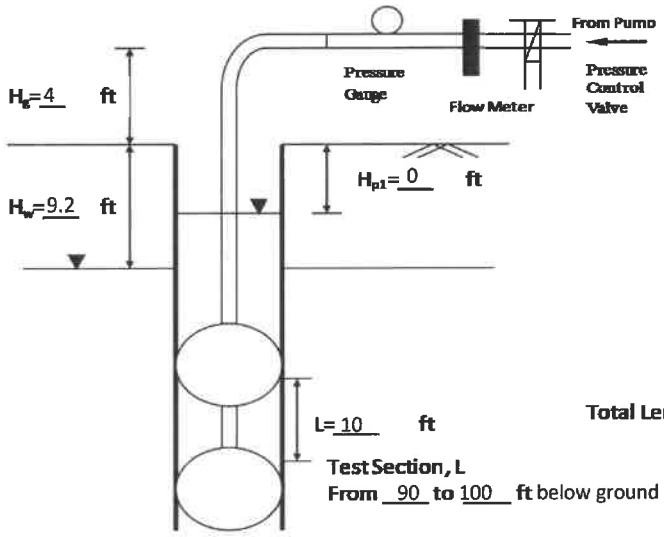
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-11

SHEET 4 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/29/2012
PROJECT NO.	HED 564	INSPECTOR	Jared Gross	RIG	Acker XLS
GROUND SURFACE EL.	10.1	DRILLER	Greg Williams	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	0.9	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	4	TYPE & MAKE OF WATER METER	Master Meter		

LOCATION



Test Section, L
From 90 **to** 100 **ft** below ground surface

Total Length of Rods and Packer Rods: 104 **ft**

R= 2.94 **in**

1 psi = 2.31 ft of water

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-12

SHEET 1 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/18/2012
PROJECT NO.	HED 564	INSPECTOR	M. Vajikar	RIG	Mobil B-58
GROUND SURFACE EL.	-14.2	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	NR	TYPE & MAKE OF WATER METER	Neptune Trident		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
6/18/2012	0	3.6	56	66	10	-	-	
	1	3.7	(El -70.2)	(El -80.2)		0.05	0.05	Packer pressure 200psi
	2	3.7				0.05	0.05	
	5	3.8				0.1	0.03	
	10	3.9				0.1	0.02	
	15	4.0				0.1	0.02	
6/18/2012	0	4.1			20	-	-	
	1	4.2				0.1	0.10	
	2	4.2				0.05	0.05	
	5	4.4				0.2	0.07	
	10	4.6				0.15	0.03	
	15	4.7				0.15	0.03	
	20	4.9				0.15	0.03	
6/18/2012	0	4.9			40	-	-	
	1	5.0				0.05	0.05	
	2	5.2				0.2	0.20	
	5	5.5				0.35	0.12	
	10	5.9				0.4	0.08	
	15	6.3				0.4	0.08	
6/18/2012	0	6.3			20	-	-	
	1	6.4				0.05	0.05	
	2	6.4				0.05	0.05	
	5	6.5				0.1	0.03	
	10	6.7				0.2	0.04	
	15	6.9				0.2	0.04	
	20	7.0				0.1	0.02	
	25	7.2				0.15	0.03	
	30	7.3				0.15	0.03	
	35	7.5				0.15	0.03	
6/18/2012	0	7.5			10	-	-	
	1	7.5				0	0.00	
	2	7.5				0	0.00	
	5	7.5				0	0.00	
	10	7.6				0.05	0.01	
	15	7.6				0.05	0.01	
	20	7.7				0.05	0.01	

Test Pressures: 0.4*(25ft soil) + 1.0*(40.8ft rock) = 50.4psi
Use 10, 20, 40, 20, 10psi pressure increments

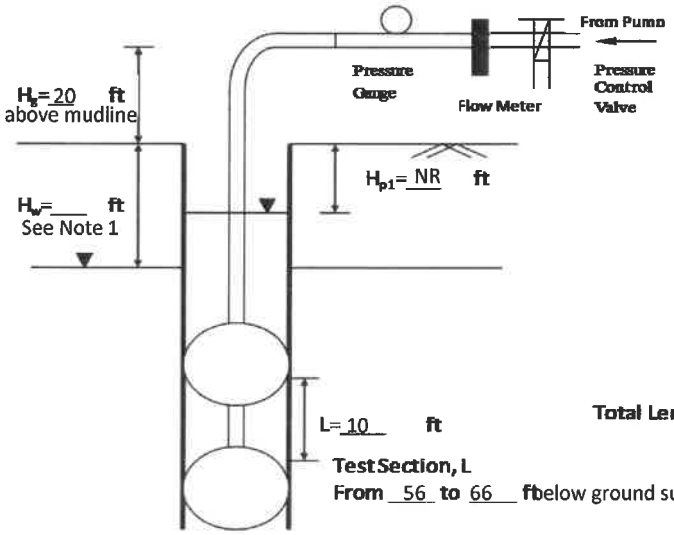
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-12

SHEET 2 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/18/2012
PROJECT NO.	HED 564	INSPECTOR	M. Vajikar	RIG	Acker XLS
GROUND SURFACE EL.	-14.2	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	NR	TYPE & MAKE OF WATER METER	Neptune Trident		

LOCATION:



Total Length of Rods and Packer Rods: 86 ft

1 psi = 2.31 ft of water

Test performed over water, working from a barge.

Note 1: Approximate water depth, from water surface to mudline, was 12 feet.

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-12

SHEET 3 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/18/2012
PROJECT NO.	HED 564	INSPECTOR	M. Vajikar	RIG	Acker XLS
GROUND SURFACE EL.	-14.2	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	NR	TYPE & MAKE OF WATER METER	Neptune Trident		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
6/18/2012	0	88.3	66	70	15	-	-	
	1	88.5	(El -80.2)	(El -90.2)		0.15	0.15	Packer pressure 200psi
	2	88.7				0.25	0.25	
	5	89.3				0.55	0.18	
	10	89.9				0.65	0.13	
	15	90.5				0.6	0.12	
	20	91.2				0.65	0.13	
6/18/2012	0	1.5			25	-	-	
	1	1.6				0.1	0.10	
	2	1.9				0.3	0.30	
	5	2.7				0.8	0.27	
	10	3.4				0.7	0.14	
	15	4.1				0.7	0.14	
	20	4.8				0.7	0.14	
6/18/2012	0	4.9			50	-	-	
	1	5.2				0.3	0.30	
	2	5.8				0.6	0.60	
	5	7.3				1.5	0.50	
6/18/2012	0	8.6			25	-	-	
	1	8.7				0.10	0.10	
	2	9.0				0.30	0.30	
	5	9.8				0.80	0.27	
	10	10.5				0.70	0.14	
	15	11.3				0.75	0.15	
	20	12.0				0.75	0.15	
	25	12.6				0.60	0.12	
6/18/2012	0	2.8			15	-	-	
	1	2.9				0.1	0.10	
	2	3.1				0.2	0.20	
	5	3.5				0.4	0.13	
	10	4.0				0.85	0.11	

Test Pressures: 0.4*(25ft soil) + 1.0*(50.8ft rock) = 60.4psi
Use 15, 25, 50, 25, 15psi pressure increments

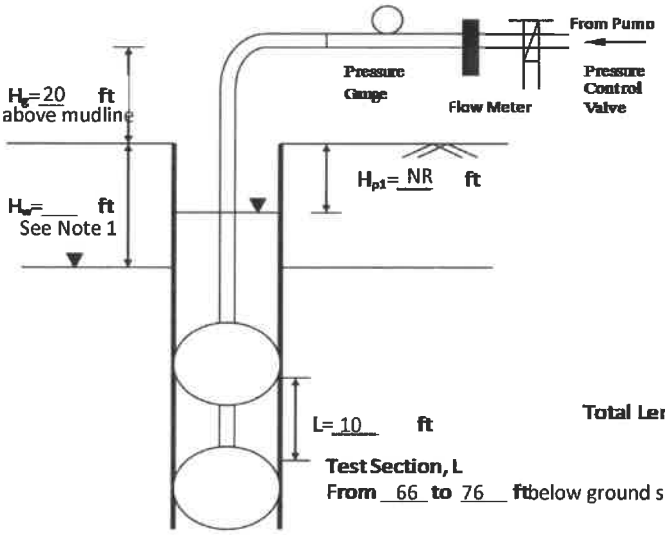
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-12

SHEET 4 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/18/2012
PROJECT NO.	HED 564	INSPECTOR	M. Vajikar	RIG	Acker XLS
GROUND SURFACE EL.	-14.2	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Sunny
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	NR	TYPE & MAKE OF WATER METER	Neptune Trident		

LOCATION:



Total Length of Rods and Packer Rods: 96 ft

1 psi = 2.31 ft of water

Test performed over water, working from a barge.

Note 1: Approximate water depth, from water surface to mudline, was 12 feet.

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-13

SHEET 1 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/25/2012
PROJECT NO.	HED 564	INSPECTOR	Andrew Thompson	RIG	Mobile B-58
GROUND SURFACE EL.	-11.7	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Rainy & Overcast
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	17	TYPE & MAKE OF WATER METER	Neptune T-10		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
6/25/2012	0	6846.4	60	70	18	-	-	
	1	6847.7	(El -70)	(El -80)		1.3	1.3	Packer pressure 200psi
	2	6848.8				1.1	1.1	
	5	6852.0				3.2	1.1	
	10	6856.7				4.7	0.9	
	15	6861.9				5.2	1.0	
6/25/2012	0	6870.0			36	-	-	
	1	6872.2				2.2	2.2	
	2	6874				1.8	1.8	
	5	6878.9				4.9	1.6	
	10	6887.2				8.3	1.7	
	15	6895.6				8.4	1.7	
6/25/2012	0	6906.5			72	-	-	
	1	6909.3				2.8	2.8	
	2	6911.8				2.5	2.5	
	5	6919.2				7.4	2.5	
	10	6931.7				12.5	2.5	
	15	6944.1				12.4	2.5	
6/25/2012	0	6955.8			36	-	-	
	1	6957				1.2	1.2	
	2	6958.2				1.2	1.2	
	5	6962				3.8	1.3	
	10	6968				6	1.2	
	15	6973.9				5.9	1.2	
6/25/2012	0	6977.2			18	-	-	
	1	6977.7				0.5	0.5	
	2	6978.4				0.7	0.7	
	5	6980.2				1.8	0.6	
	10	6983.3				3.1	0.6	
	15	6986.2				2.9	0.6	

Test Pressures: 0.4*(10ft soil) + 1.0*(70ft rock) = 74psi
Use 18, 36, 72psi pressure increments

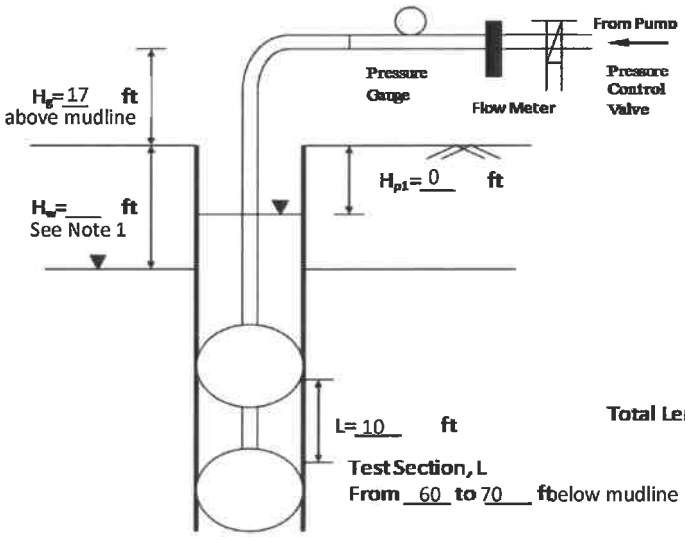
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-13

SHEET 2 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/25/2012
PROJECT NO.	HED 564	INSPECTOR	Andrew Thompson	RIG	Mobile B-58
GROUND SURFACE EL.	-11.7	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Rainy & Overcast
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	17	TYPE & MAKE OF WATER METER	Neptune T-10		

LOCATION



Total Length of Rods and Packer Rods: 87 ft

1 psi = 2.31 ft of water

Test performed over water, working from a barge.

Note 1: Approximate water depth, from water surface to mudline, was 6 feet.

IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-13

SHEET 3 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/25/2012
PROJECT NO.	HED 564	INSPECTOR	Andrew Thompson	RIG	Mobile B-58
GROUND SURFACE EL.	-11.7	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Rainy & Overcast
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	17	TYPE & MAKE OF WATER METER	Neptune T-10		

DATE	TIME OF TEST (min)	INITIAL FLOW METER READING	DEPTHS		APPLIED PRESURE (psi)	VOLUME OF INFLOW (gallons)	RATE OF INFLOW (gal/min)	REMARKS
			DEPTH TO TOP (ft)	DEPTH TO BOTTOM (ft)				
6/25/2012	0	6674.5	70	80	20	-	-	Packer pressure 200psi
	1	6675.7	(El -80)	(El -90)		1.2	1.2	
	2	6676.9				1.2	1.2	
	5	6681.0				4.1	1.4	
	10	6687.8				6.8	1.4	
	15	6694.6				6.8	1.4	
6/25/2012	0	6699.0			40	-	-	
	1	6701.5				2.5	2.5	
	2	6703.8				2.3	2.3	
	5	6710.8				7	2.3	
	10	6722.2				11.4	2.3	
	15	6733.4				11.2	2.2	
6/25/2012	0	6739.0			80	-	-	
	1	6743.0				4	4.0	
	2	6746.7				3.7	3.7	
	5	6758.0				11.3	3.8	
	10	6777.2				19.2	3.8	
	15	6796.4				19.2	3.8	
6/25/2012	0	6797.3			40	-	-	
	1	6799.1				1.8	1.8	
	2	6801.0				1.9	1.9	
	5	6806.2				5.2	1.7	
	10	6815.5				9.3	1.9	
	15	6824.7				9.2	1.8	
6/25/2012	0	6826			20	-	-	
	1	6826.9				0.9	0.9	
	2	6828				1.1	1.1	
	5	6831				3	1.0	
	10	6836				5	1.0	
	15	6841				5	1.0	

Test Pressures: 0.4*(10ft soil) + 1.0*(80ft rock) = 84psi
Use 20, 40, 80, 40, 20psi pressure increments

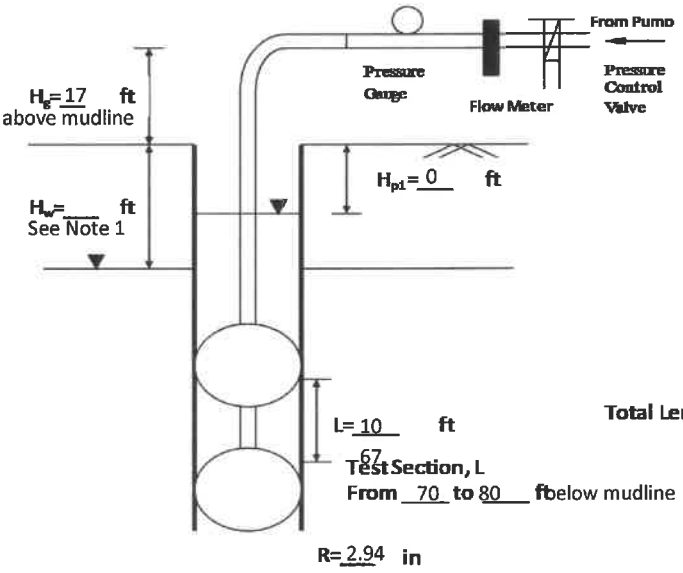
IN SITU ROCK PERMABILITY DETERMINATION PACKER TEST

Boring No. B-13

SHEET 4 of 4

PROJECT	New 20" Sub Aqueous Water Main to City Island	BOREHOLE DIAMETER	2.94"	DATE	6/25/2012
PROJECT NO.	HED 564	INSPECTOR	Andrew Thompson	RIG	Mobile B-58
GROUND SURFACE EL.	-11.7	DRILLER	Luis Ramos	CONTRACTOR	WGI
GROUND WATER LEVEL (El.)	--	TYPE & MAKE OF PUMP	--	WEATHER	Rainy & Overcast
DISTANCE FROM GROUND SURFACE TO SWIVEL (ft)	17	TYPE & MAKE OF WATER METER	Neptune T-10		

LOCATION



Total Length of Rods and Packer Rods: 97 **ft**

1 psi = 2.31 ft of water

Test performed over water, working from a barge.

Note 1: Approximate water depth, from water surface to mudline, was 6 feet.

APPENDIX E

Tidal Gauge Benchmark

DDC

The City of New York
Department of Design and Construction
Division of Technical Support
Topographical Section

HED-564

EL | 2

All Elevations on this sheet

Refer to BRONX HWY Datum

FILED JUN 05 2012

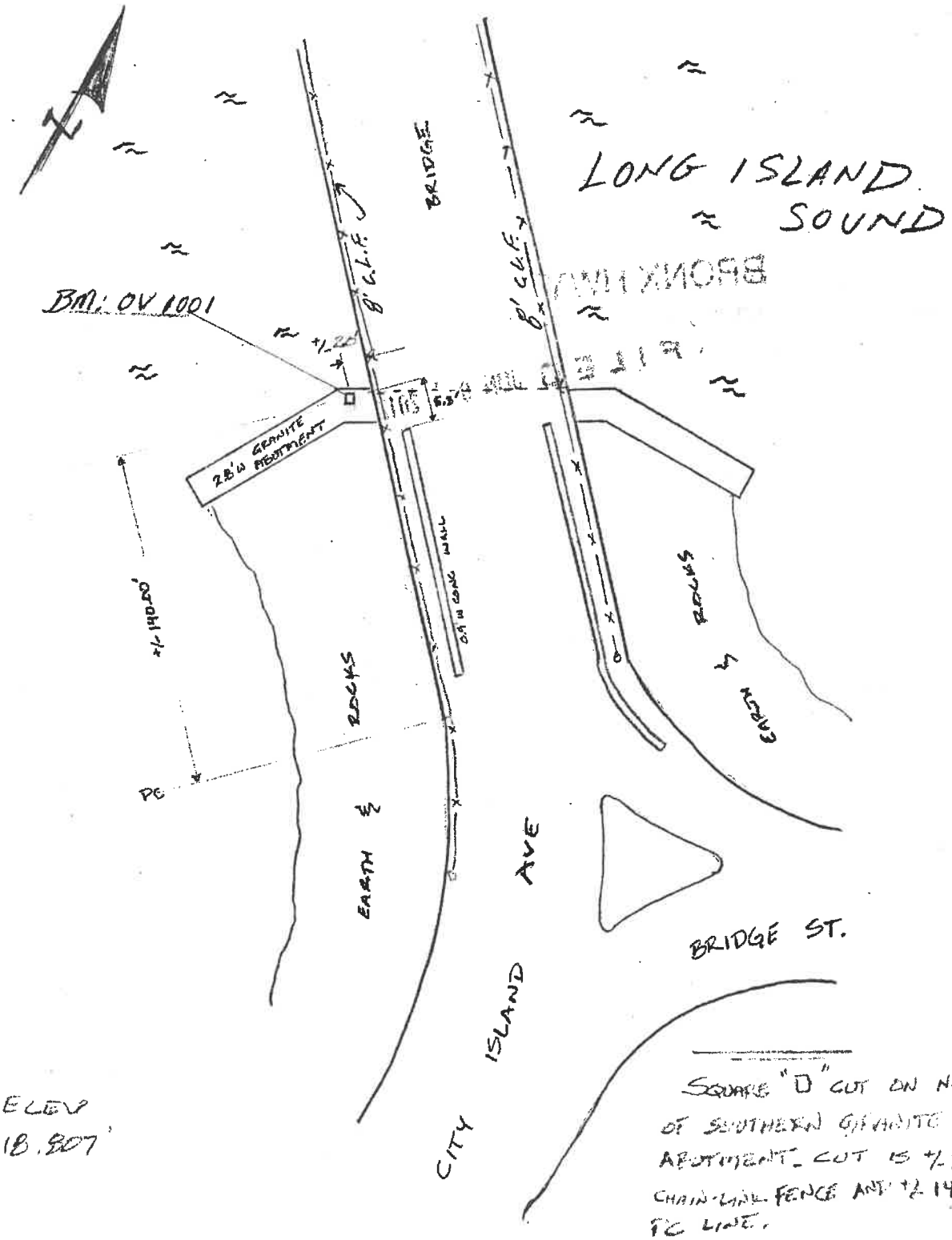
DDC

Benchmark: OV-1001

The City of New York
rtment of Design and Construction
Division of Technical Support
Topographical Section

Date: 06/05/12
Crew Chief: J. BLAKE
T# _____ **G#** _____
Job ESTABLISH TIDE GAUGE

All Elevations on this Sheet Refer to BRONX H'WAY **Datum**



ELEV
18.807'

SQUARE "D" CUT ON NORTHWEST END OF SOUTHERN GRANITE BRIDGE ABUTMENT. CUT IS +/- 20' WEST OF CHAIN-LINK FENCE AND +/- 140.0' NORTH OF PC LINE.

ELEV: 18.81'

(NO TEXT THIS PAGE)

ATTACH TO CONTRACT DOCUMENTS

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

ADDENDUM NO. 1

DATED: February 24, 2017

THIS ADDENDUM IS HEREBY MADE A PART OF THE CONTRACT DOCUMENTS

1. **Refer** to the Bid and Contract Documents, VOLUME 1 OF 3, Attachment 1 – Bid Information on Page A-1;
   Change the percentage shown for Performance and Payment Security from "**30**" to read "**100%**".

2. **Refer** to the Bid and Contract Documents, VOLUME 3 OF 3, I-PAGES Page I-6;
   Delete Page I-6 (Section 8.53 WFR)
   Substitute the revised attached pages I-6-R and I-6A-R (Revised Section 8.53 WFR)

2. **Refer** to the Contract Drawings, Sheet 7 of 26, Note No. 4;
   Delete Note No. 4. ("MINIMUM STAGING AREA ... IN THE CONTRACT.")
   Substitute the revised Note No. 4:

   "MINIMUM STAGING AREA FOR THE ENTRANCE AND EXIT SITE IS SHOWN ON PLANS. IF THE CONTRACTOR NEEDS A LARGER STAGING AREA FOR LAYING DOWN AND STORING MATERIALS, DUE TO THE CONTRACTOR'S MEANS AND METHODS, THE COST FOR ADDITIONAL STAGING AREA ON PRIVATE PROPERTY SHALL BE PAID FOR UNDER ITEM 8.53 WFR."

(NO FURTHER TEXT THIS PAGE)

END OF ADDENDUM NO. 1

By signing in the space provided below, the bidder acknowledges receipt of this Addendum consisting of TWO (2) pages and TWO (2) pages of attachments.

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

for PURNIMA DHARIA, P.E.
Assistant Commissioner / Design I

_____
Name of Bidder

By:_____

SECTION 8.53 WFR

Retaining Wall Flag Repair

8.53WFR.1. INTENT.

This work shall consist of the repair of flagged conditions (Safety and Structural) of the existing retaining wall (sea wall) as ordered by the Engineer during the life of the contract, including reimbursement for obtaining construction access to private property.

Any damage to the existing sea wall caused by the Contractor's negligence or any construction work performed on the wall by the Contractor, without the written approval of the Engineer, shall be repaired to the satisfaction of the Engineer at the sole expense of the Contractor. This item shall not relieve the Contractor of his requirements specified in Section 10.20 and Section 10.23 of the NYCDEP Standard Sewer and Water Main Specifications.

8.53WFR.2. DESCRIPTION.

A flagged condition is defined to be a deficient condition in the retaining wall identified during the construction as requiring work to facilitate maintenance and protection of traffic.

Flagged repairs shall include, but not be limited to:

a) Shifted or collapsed sections of wall including concrete coping on top;

b) Utility repairs.

8.53WFR.3. METHODS.

The method for the repair of existing retaining walls shall be as directed by the Engineer.

All work shall be performed in accordance with the applicable section of the NYCDOT Standard Highway Specifications.

8.53WFR.4. MEASUREMENT.

The contract price for this item shall be a Fixed Sum of the amount as shown against this item in the Bid Schedule. The Bidder shall not alter this pre-entered amount. Should the amount shown be altered, the altered figures will be discarded and the pre entered price and amount will be used to determine the total amount bid for this contract.

No guarantee is given that this fixed price item will in fact be required in this contract. The estimated price for this item in the Bid Schedule is included in the total bid solely to insure a method of payment for this work.

8.53WFR.5. PRICE TO COVER.

Payment made under this Item shall be equal to the sum total of all vouchers submitted by the Contractor as payment for the cost of performing retaining wall flag repairs and the reasonable cost for the rental of a portion of the lot adjacent to the receiving pit as shown on Contract Drawing Sheet 7 of 26 that may be necessary for additional staging operations of the contractor, all as approved by the Commissioner. Payments for the retaining wall flag repairs shall be in accordance with Article 26 of the Standard Construction Contract. Payment under this item, including partial payments, will not be made until the Contractor has furnished satisfactory evidence to the Engineer that the Contractor has performed the required retaining wall flag repairs. Additionally, payment for the rental invoices for staging area as described above will not be made until the Contractor furnishes proof of prompt payment of monthly rental invoices to the private property owner. No markup or overhead will be paid on staging area rental invoices.

The voucher for the payment shall be submitted to the Engineer on a monthly basis.

Payment will be made under:

Item No.	Item	Pay Unit
8.53 WFR	RETAINING WALL FLAG REPAIRS	FIXED SUM

ATTACH TO CONTRACT DOCUMENTS

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

ADDENDUM NO. 2

DATED: February 27, 2017

THIS ADDENDUM IS HEREBY MADE A PART OF THE CONTRACT DOCUMENTS

1. **Refer** to the Bid and Contract Documents, VOLUME 1 OF 3;
   Delete BID SCHEDULE Pages B-1 through B-28;
   Insert attached Bid Schedule pages B-1-R, B-2-R and B-3 [REVISION #1] through B-28 [REVISION #1]
   NOTE: Sequence 120, Item 8.53 WFR fixed amount was revised.

END OF ADDENDUM NO. 2

By signing in the space provided below, the bidder acknowledges receipt of this Addendum consisting of ONE (1) page and TWENTY-EIGHT (28) pages of attachments.

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

Purnima Dharia

PURNIMA DHARIA, P.E.
Assistant Commissioner / Design I

_____
Name of Bidder

By:_____

BID SCHEDULE

The following pages contain the Bid Schedule. Items listed in the Bid Schedule shall comply with the requirements of the corresponding sections of the specifications detailed in the table below. All references to the Standard Specifications, Details, Standards, and Drawings shall be to the version in effect at the time of bid.

NOTES:

- "XXX" in the table below signifies any possible combination of characters and spaces.
- The table below may contain item formats which are not included in the Bid Schedule.
- ***Please refer to the Bid Schedule to determine which specifications apply.***

Item Number Format	Applicable Specifications
4.XXX 6.XXX 7.XXX 8.XXX *(Except 8.01 XXX; see below)* 9.XXX	NYC Department of Transportation ("DOT") Standard Highway Specifications, as amended in the R-Pages, located in Volume 3 of 3 herein; ***AND*** NYC DOT Standard Details of Construction; ***OR,*** ***if the item is not contained within the Standard Specifications***, then see the applicable New Sections in the I-Pages, located in Volume 3 of 3 herein.
1.XXX 50.XXX through 55.XXX 60.XXX through 66.XXX 70.XXX through 79.XXX *(Except 79.11XXX; see below)* DSS XXX DSW XXX	NYC Department of Environmental Protection ("DEP") Standard Sewer and Water Main Specifications, as amended in the R-Pages and SW-Pages, located in Volume 3 of 3 herein; ***AND*** NYC DOT Specifications for Trunk Main Work; ***AND*** NYC DOT Sewer Design Standards; ***AND*** NYC DOT Water Main Standard Drawings; ***OR,*** ***if the item is not contained within the Standard Specifications,*** then see the Amendments to the Standard Sewer and Water Main Specifications in the SW-Pages, located in Volume 3 of 3 herein.
GI-XXX PM-XXX ROW XXX	New Sections in the I-Pages, located in Volume 3 of 3 herein ***AND*** NYC DEP Standards for Green Infrastructure.
UTL-XXX	Gas Cost Sharing Standard Specifications in the EP7-Pages, located in Volume 3 of 3 herein.

BID SCHEDULE

Item Number Format	Applicable Specifications
83X.XXX HW-XXX MX.XXX MP XXX NYC-XXX NYCT-XXX NYPD-XXX P XXX PK-XXX	New Sections in the I-Pages, located in Volume 3 of 3 herein.
BMP-XXX	Specifications for Construction of Best Management Practice (BMP) and Mitigation Area in the BMP-Pages, located in Volume 3 of 3 herein.
E XXX ME XXX	Specifications for the Specialty Electrical Works in the EL-Pages, located in Volume 3 of 3 herein.
SL-XXX	NYC DOT Division of Street Lighting Specifications ***AND*** NYC Division of Street Lighting Standard Drawings.
T-XXX	NYC DOT Specifications for Traffic Signals and Intelligent Transportation Systems ***AND*** NYC DOT Traffic Signal Standard Drawings.
JB XXX	Joint Bid Specifications in the JB-Pages, located in Volume 3 of 3 herein.
8.01 XXX	Specifications for Handling, Transportation and Disposal of Nonhazardous and Potentially Hazardous Contaminated Materials in the HAZ-Pages, located in Volume 3 of 3 herein.
67.XXX	Specifications for Abatement of Coal Tar Wrap Asbestos Containing Materials in the ASB-Pages, located in Volume 3 of 3 herein.
79.11XXX	Specifications for Abatement of Transit Authority Duct Insulation Asbestos Containing Materials in the ASB-Pages, located in Volume 3 of 3 herein.

(NO FURTHER TEXT ON THIS PAGE)

ATTACH TO CONTRACT DOCUMENTS

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

ADDENDUM NO. 3

DATED: February 28, 2017

THIS ADDENDUM IS HEREBY MADE A PART OF THE CONTRACT DOCUMENTS

1. **Refer** to the Bid and Contract Documents, VOLUME 1 OF 3, BID BOOKLET;
   Delete page 3a;
   Insert attached BID BOOKLET page 3a-R.
   NOTE: Horizontal Directional Drilling Special Experience requirement was revised.

2. **Refer** to the Bid and Contract Documents, VOLUME 3 OF 3, SW-PAGES;
   Delete page SW-16;
   Insert attached page SW-16-R.
   NOTE: Horizontal Directional Drilling Special Experience requirement was revised.

3. For additional information, see the attached one (1) page of "Questions Submitted by Bidders and DDC's Responses".

END OF ADDENDUM NO. 3

By signing in the space provided below, the bidder acknowledges receipt of this Addendum consisting of ONE (1) page and THREE (3) pages of attachments.

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

Purnima Dharia
PURNIMA DHARIA, P.E.
Assistant Commissioner / Design I

_____
Name of Bidder

By:_____

(B) SPECIAL EXPERIENCE REQUIREMENTS FOR SPECIFIC AREAS OF WORK (to be provided after an award of contract):

The requirements in this Section (B) apply to this contract where indicated by a blackened box (■).

The Special Experience Requirements set forth below apply to the contractor, subcontractor or sub-subcontractor that will perform the specific area of work. **Compliance with such Special Experience Requirements will be determined solely by the City after an award of contract.** After an award of contract, when requested by the City, the contractor will be required to submit the qualifications of the contractor, subcontractor or sub-subcontractor that will perform the specific area of work. If the bidder intends to perform such work itself, it must demonstrate compliance with the Special Experience Requirements. If the bidder intends to subcontract this work, the proposed subcontractor or sub-subcontractor 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.

Special Experience Requirements apply to the contractor, subcontractor or sub-subcontractor (hereinafter referred to as the "entity") that will perform any specific area of work indicated by a blackened box. The entity may have performed the required prior project(s) as a prime contractor, subcontractor or sub-subcontractor.

☐ **Hazmat Work:** Hazmat Work is any item of work in the Bid Schedule that begins with the prefix 8.01. The entity that will perform any Hazmat Work must, within the last three (3) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least five (5) projects similar in scope and type to the required work.

☐ **Pile, CFA Pile, and/or Mini-Pile Work:** The entity that will perform the Pile, CFA Pile and/or Mini-Pile Work must, within the last three (3) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least two (2) projects similar in scope and type to the required work.

For professional services in connection with Pile Work, (i.e., engineering and inspection services), the individual who will perform the required services must be a Professional Engineer licensed by the state of New York. Such individual must also comply with the above requirements for prior projects.

☐ **Construction Report, Monitoring And Post-Construction Report, and Continuous Real-Time Monitoring For Vibrations And Movements And Post-Construction Report Work:** The entity that will perform the Construction Report, Monitoring For Vibrations And Movements, and Post-Construction Report Work must, within the last three (3) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least two (2) projects similar in scope and type to the required work.

For professional services in connection with Reporting and Monitoring Work, (i.e., engineering and inspection services), the individual who will perform the required services must be a Professional Engineer licensed by the state of New York. Such individual must also comply with the above requirements for prior projects.

■ **OTHER: Horizontal Directional Drilling:** The horizontal directional drilling Contractor or subcontractor performing the work required under this contract must have successfully self-performed at least three (3) horizontal directional drilling projects to install product pipe of a similar nominal diameter and length to the proposed project within the past five years. The Engineer shall have sole authority to determine the adequacy of representative projects. One of the successfully completed projects shall have been in similar ground conditions (strata type and hydrostatic head), as to those anticipated on this contract.

The Contractor shall provide adequate lighting in pipe being inspected and around equipment being utilized. Power and lighting circuits shall be separated and thoroughly insulated.

(J) GEOTECHNICAL INSTRUMENTATION

The Contractor shall install and monitor geotechnical instrumentation at the locations and in accordance with the requirements shown, specified, ordered or approved.

60.32.6 QUALIFICATIONS

The horizontal directional drilling Contractor or subcontractor performing the work required under this contract must have successfully self-performed at least three (3) horizontal directional drilling projects to install product pipe of a similar nominal diameter and length to the proposed project within the past five years. The Engineer shall have sole authority to determine the adequacy of representative projects.

One of the successfully completed projects shall have been in similar ground conditions (strata type and hydrostatic head), as to those anticipated on this contract.

The Contractor shall submit a description of such projects, which shall include at a minimum, a listing of the locations, dates of projects, owners, pipe types and sizes, type of equipment utilized, ground conditions, boring lengths, maximum line and grade deviations and other information relevant to the issue of the successful completion of such projects.

The Contractor's project manager, superintendent, drill operator, and guidance system operator assigned to horizontal directional drilling shall be experienced in work of this nature and shall have successfully completed similar projects using horizontal directional drilling. The Contractor shall submit substantiating evidence of qualifications in accordance with the provisions of this Section. If the Contractor elects to employ a specialist subcontractor(s) to perform horizontal directional drilling, the Contractor shall obtain and submit qualification documents for the subcontractor(s). Subcontractor(s) shall be held to the same requirements as those for the Contractor described herein.

All drilling, drill guidance, and pipe joining equipment operators shall be experienced in comparable horizontal directional drilling work, and shall have been fully trained in the use of the proposed equipment by an authorized representative of the equipment manufacturer(s) or their authorized training agents.

Prior to the award of the contract, the Contractor will be required to submit the name and resume of the horizontal directional drilling subcontractor for approval.

60.32.7 SPECIFIC REQUIREMENTS

(A) The Contractor shall provide all equipment, materials, and personnel necessary for completing the installation as shown on the contract drawings and specified herein. The equipment and materials shall include but are not limited to:

(1) Directional drilling rig with all ancillary equipment, including drill pipe, drilling fluid, cutting tools, reaming bits, swivels, expanders, motors, pumps, hoses, mixing equipment, drilling fluid processing equipment (cuttings separation equipment), downhole survey equipment, energized surface grid tracking system, fluid pressure and flow rate monitoring equipment, spare parts, pipe handling equipment (cranes, backhoes, rollers, side boom tractors) control equipment, and office equipment.

(2) Drilling fluids, water, fuel, lubricant, polymers, or other additives.

(3) Any other expendable or reusable materials, supplies, and equipment needed for the installation.

(B)The drilling system shall include a fluid pump and separation plant that can achieve the rates of drilling fluid pumping, spoil separation, and slurry cleaning required by the Contractor to achieve installation through the strata anticipated by the geotechnical data. Shaker screens and hydrocyclones may be required for efficient separation of spoils. The Contractor is advised that the separation plant must fit within the allowable work areas shown on the contract drawings unless otherwise permitted in writing by the Engineer.

QUESTIONS SUBMITTED BY BIDDERS AND DDC'S RESPONSES

QUESTION 1:

Please reference Special Notice to Bidders, Special Experience Requirements section of the proposal documents page 3a, Section , "Other" in where the Horizontal Directional Drilling (HDD) Contractor must have successfully self-performed five (5) horizontal directional drilling projects of similar diameter and length within the last two (2) years. We are working with a HDD subcontractor in where their sole business of 25 years is HDD, of which in the last 10 years of business they have completed similar HDD of similar length and diameter. We believe the requirement of 5 projects within 2 years is too stringent and overreaching for the project. Therefore, we respectfully request the NYC Department of Design and Construction consider revising the requirements to allow a period of 10 years' experience for projects of similar diameter and length.

DDC's RESPONSE:

Please see Article #1 and Article #2 of this Addendum.

(NO FURTHER TEXT THIS PAGE)

Department of Design and Construction

INFRASTRUCTURE DIVISION
BUREAU OF DESIGN

VOLUME 3 OF 3

PROJECT ID: HED564

NEW 20" SUB-AQUEOUS WATER MAINS TO CITY ISLAND

Together With All Work Incidental Thereto
BOROUGH OF THE BRONX
CITY OF NEW YORK

_____
Contractor.

_____

Dated_____, **20**_____

_____