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Remedial Bureau C
Division of Environmental Remediation

PROJECT MANUAL

FOR

THE DELAVAL PROPERTY ENVIRONMENTAL RESTORATION PROGRAM

PROJECT MANUAL

CITY OF POUGHKEEPSIE
DUTCHESS COUNTY, NEW YORK

Bid No. 09-06-27

The DeLaval Property
Rinalidi Boulevard
Environmental Restoration Program Project
NYSDEC Site No. B00190-3

Prepared for:

City of Poughkeepsie
62 Civic Center Plaza
P.O. Box 300
Poughkeepsie, New York 12602-0300

Hon. Nancy Cozean, Mayor
James Marquette, City Administrator

Council Members:

Thomas Parise
Erik Haight
John Tkazyik
Brian Doyle
Penny Lewis
Mary Solomon
Gwen Johnson
Dennis Weinel

Design Engineer:

Clough Harbour & Associates LLP
III Winners Circle
Albany, New York 12205

Contact: Keith Ziobron, P.E.
Phone: (518) 453-4500
Fax: (518) 453-4773

Subconsultant for Waterfront Design:

Ocean and Coastal Consultants Engineering, P.C.
35 Corporate Drive
Trumball, Connecticut 06611

Contact: Azure Dee Sleicher, P.E.
Phone: (203) 268-5007
Fax: (203) 268-8821

Date of Contract Documents: August 8, 2007

CERTIFICATIONS

I, the undersigned, certify under penalty of law, that this document and all attachments (except those technical specifications listed below) were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly prepared the Project Manual for the DeLaval Property Environmental Restoration Program Project in accordance with the Division of Environmental Remediation (DER) Draft DER-10 Technical Guidance for Site Investigation and Remediation (December 2002), and in compliance with the July 2004 Municipal Assistance for Environmental Restoration Projects Procedures Handbook.

Based upon my personal activities and my direct supervision of the persons directly responsible for preparing this Remedial Construction Design Report, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

For Clough Harbour & Associates LLP:
(Professional Seal)



Signature Of Certifying Engineer

August 6, 2007
Date Of Certification

Keith J. Ziobron
Printed Name Of Certifying Engineer

072760-1
Registration Number

New York
Registration State

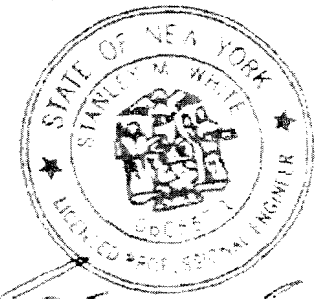
Clough Harbour & Associates LLP
Company

Associate
Title

The following technical specifications were prepared by Ocean & Coastal Consultants, P.C. (OCC) and are hereby certified to be true, accurate, and complete to the best knowledge and belief of the undersigned:

Section 02070	Selective Demolition, Salvage For Reuse, and Utility Protection
Section 02151	Shoring (Shoreline Work)
Section 02220	Excavating, Backfilling and Compacting (Shoreline Work)
Section 02270	Riprap Shore Protection
Section 02369	Steel Pipe Sleeving
Section 02375	Steel Sheet Piles
Section 02620	Geotextile Fabric (Shoreline Work)
Section 03300	Cast-In-Place Concrete
Section 03400	Precast Concrete
Section 05110	Waterfront Structural Steel
Section 05500	Metal Fabrications
Section 09905	Protective Coating

For Ocean and Coastal Consultants Engineering, P.C.:
(Professional Seal)



Signature Of Certifying Engineer

06 August 2007
Date Of Certification

Stanley M. White
Printed Name Of Certifying Engineer

060557-1
Registration Number

New York
Registration State

Ocean &Coastal Consultants Engineering P.C.
Company

Associate
Title

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NOTICE TO BIDDERS

City of Poughkeepsie
The DeLaval Property
Environmental Restoration Project
Dutchess County, New York

Sealed bids will be received by the City of Poughkeepsie Purchasing Department at City Hall located at 62 Civic Center Plaza, Poughkeepsie, New York 12602 until 11:00 A.M. on Friday, September 14, 2007, at which time they will be publicly opened and read aloud.

The work site is located immediately off of the southwest corner of the intersection between Rinaldi Boulevard and Pine Street in the City of Poughkeepsie, Dutchess County, New York. The work site is bordered to north by a former sewage treatment plant that was recently developed for a restaurant/catering facility known as the Grandview, to the east by railroad tracks owned and operated by MTA Metro North Railroad, to the south by petroleum bulk storage tanks owned and operated by Effron Oils, and the Hudson River to the west.

The Work includes providing all labor, materials, machinery, tools, equipment and other means of construction necessary and incidental to the completion of the work shown on the plans and described in these specifications including, but not necessarily limited to the following: establishing site controls, installing stormwater pollution prevention devices, clearing and grubbing the site, removal and delivery of utility poles and associated electrical equipment on the project site to the owner, removal of an existing stone monument and delivery to the Owner, abandonment of three small pipelines, installation of two bulkheads along the riverfront, installation of rip-rap revetment to provide shoreline protection in non-bulkhead zones, excavation and off-site disposal of contaminated soils, backfilling the excavated areas with on-site materials and imported clean fill, temporary management of impacted groundwater, the removal of an underground storage tank and six-inch pipeline containing groundwater and/or weathered petroleum product, site grading, installation of geotextile demarcation barrier across the site, placing and compacting soils, abandonment of monitoring wells, and performing quality assurance/quality control (QA/QC) testing and other related work. An alternate for the project includes the placement of topsoil on the property and the establishment of vegetation via seeding and mulching the site.

The project is being completed through the New York State Department of Environmental Conservation's (NYSDEC's) Environmental Restoration Program (ERP). The Work is funded in part with State money; however, the State will not be party to the awarded contract.

Drawings and Specifications may be examined and obtained at the locations listed below commencing on Monday, August 13, 2007.

Complete sets of the drawings, specifications and bid forms may be obtained from City of Poughkeepsie City Hall located at 62 Civic Center Plaza, Poughkeepsie, New York 12602 and at and Clough Harbour & Associates LLP offices located at III Winners Circle, Albany, New York 12205, in accordance with the Instructions To Bidders; upon deposit of $100.00 for each complete set of contract documents. Checks shall be made payable to Clough Harbour & Associates LLP.

In order to be considered for a full refund, the complete set of Contract Documents and the Refund Form must be returned to Clough Harbour & Associates LLP within 30 days following the bid opening. Documents returned after 30 days and Bidders who obtain more than one set, will receive a partial refund equal to the deposit less the actual cost of reproduction for contract documents returned unmarked and in good condition.

All bids must be made on the official Bid Form or an exact copy by reproduction thereof and enclosed in a sealed envelope. This is a unit price bid as described in the Instructions To Bidders. No Bidder may withdraw his bid within forty five (45) calendar days after the actual date of the opening thereof. Each bid must be accompanied by a bid security in the amount of five percent of the base bid in accordance with the Instructions To Bidders.

The successful Bidder will be required to furnish construction performance and payment bonds in the full amount of the contract price.

The successful bidder will be required to comply with all provisions of the Federal Government Equal Employment Opportunity clauses issued by the Secretary of Labor on May 21, 1968 and published in the Federal Register (41CFR Part 60-1, 33 F.2 7804).

The bidding documents may be examined at following addresses:

Clough Harbour & Associates LLP III Winners Circle Albany, New York 12205	City of Poughkeepsie 62 Civic Center Plaza Poughkeepsie, New York 12602	McGraw Hill Construction/Dodge Reports 6 Wembley Court Albany, New York 12205

Owner reserves the right to reject any and all Bids, to waive any and all informalities and the right to disregard all nonconforming, non-responsive or Conditional Bids. A pre-bid meeting will be held at 10:00 AM on Friday, August 24, 2007 at the Project Site. Representatives from the City of Poughkeepsie, Clough Harbour & Associates LLP, and the New York State Department of Environmental Conservation will be present during the meeting.

OWNER:

City of Poughkeepsie
62 Civic Center Plaza
P.O. Box 300
Poughkeepsie, New York 12602-0300

Contact:
Mr. Edmond Murphy
Director of Development
Phone: (845) 451-4046
Fax: (845) 451-6152

ENGINEER:

Clough Harbour & Associates LLP
III Winners Circle
Albany, New York 12205

Contact:
Mr. Scott Smith, P.E.
Phone: (315) 471-3920
Fax: (315) 471-3569

INSTRUCTIONS TO BIDDERS

** Read all documents contained in the Contract Documents**

PROJECT IDENTIFICATION:

a) Project Title: The DeLaval Property Environmental Restoration Project

b) Owner: City of Poughkeepsie
62 Civic Center Plaza
P.O. Box 300
Poughkeepsie, New York 12602-0300

c) Engineer: Clough Harbour & Associates LLP
III Winners Circle
Albany, New York 12205
Phone: (518) 453-4500
Attn: Keith Ziobron, P.E.

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1. Defined Terms.

Terms used in these Instructions to Bidders which are defined in the Standard General Conditions of the Project Manual have the meanings assigned to them in the General Conditions.

Certain additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.

1.1 Bidder - one who submits a Bid directly to OWNER as distinct from sub-bidder, who submits a bid to a Bidder.

1.2 Issuing Office - the office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

1.3 Successful Bidder - the lowest, responsible and responsive Bidder to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

2. Copies of Bidding Documents

2.1 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Advertisement or Notice to Bidders may be obtained from the Issuing Office. For other than the successful Bidder, if one complete copy of the Bidding Documents is returned within thirty days following the award of the contract or the rejection of the bid of a Bidder, the full amount of the deposit will be returned to the Bidder. Partial reimbursement, in an amount equal to the full amount of the deposit sum for one set of Bidding Documents less the actual cost of reproduction of the Bidding Documents, shall be made for all other copies of the Bidding Documents returned in good condition within 30 days of the award of the contract or the rejection of the bids.

2.2 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.3 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

3. Qualification of Bidders

To demonstrate qualifications to perform the Work, each Bidder must be prepared to submit within five days after Bid opening upon OWNER's request detailed written evidence such as financial data, previous experience, present commitments and other such data as may be called for below (or in the Supplementary Instructions). Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract.

4. Examination of Contract Documents and Site

4.1 It is the responsibility of each bidder before submitting a Bid:

4.1.1 To examine thoroughly the Contract Documents and other related data identified in the Bidding Documents (including "technical data" referred to below);

4.1.2 To visit the site to become familiar with and satisfy Bidder as to the general, local and site conditions that may affect cost, progress, performance, or furnishing of the Work;

4.1.3 To consider federal, state, and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work;

4.1.4 To study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related data; and

4.1.5 To promptly notify ENGINEER of all conflicts, errors, ambiguities or discrepancies which Bidder has discovered in or between the Contract Documents and such other related documents.

4.2 Reference is made to the Supplementary Conditions for identification of:

4.2.1 Those reports of explorations and tests of subsurface conditions at or contiguous to the site which have been utilized by ENGINEER in preparation of the Contract Documents. Bidder may rely upon the general accuracy of the "technical data" contained in such reports but not upon other data, interpretations, opinions or information contained in such reports or otherwise relating to the subsurface conditions at the site, nor upon the completeness thereof for the purposes of bidding or construction.

4.2.2 Those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the site that have been utilized by ENGINEER in preparation of the Contract Documents. Bidder may rely upon the general accuracy of the "technical data" contained in such drawings but not upon other data, interpretations, opinions, or information shown or indicated in such drawings or otherwise relating to such structures, nor upon the completeness thereof for the purposes of bidding or construction.

Copies of such reports and drawings will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.2 of the General Conditions has been identified and established in Paragraph SC-4.2 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion drawn from any "technical data" or any such data, interpretations, opinions, or information.

4.3 Information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities or others, and the OWNER and ENGINEER do not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.

4.4 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Contract Documents due to differing or unanticipated conditions appear in Paragraphs 4.2 and 4.3 of the General Conditions.

4.5 Before submitting a Bid each Bidder will be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site or otherwise, which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contact Documents.

4.6 On request, OWNER will provide each Bidder access to the site to conduct such examinations, investigations, explorations, tests, and studies as each Bidder deems necessary for submission of a Bid. Bidder must fill all holes and clean up and restore the site to its former conditions upon completion of such explorations, investigations, tests, and studies.

4.7 Reference is made to the Supplementary Conditions for the identification of the general nature of work that is to be performed at the site by OWNER or others (such as utilities and other prime contractors) that relates to the work for which a Bid is to be submitted. On request, OWNER will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such work.

4.8 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception of the Bid is premised upon performing and furnishing the Work required by the Contract Documents and applying the specific means, methods, techniques, sequences, or procedures for construction (if any) that may be shown or indicated or expressly required by the Contract Documents, the Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities and discrepancies that Bidder has discovered in the Contract Documents, and the Contract documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

4.9 The provisions of 1-4.1 through 4.8, inclusive, do not apply to Asbestos, Polychlorinated biphenyls (PCBs), Petroleum, Hazardous Waste, or Radioactive Material covered by Paragraph 4.5 of the General Conditions.

5. Availability of Lands for Work, etc.

The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by Contractor in performing the Work are identified in the Contract Documents. All additional land and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents.

The CONTRACTOR shall provide access for observation and inspection to the project site at all times to the OWNER, ENGINEER, and the New York State Department of Environmental Conservation.

6. Interpretations and Addenda.

6.1 All questions about the meaning or intent of the Bidding Documents are to be directed to ENGINEER. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

6.2 Addenda may also be issued to modify the Bidding Documents as deemed advisable by OWNER or ENGINEER.

7. Bid Security.

7.1 Each bid must be accompanied by Bid security made payable to OWNER in an amount of five (5) percent of Bidder's maximum Bid Price and in the form of a certified or bank check or a Bid Bond (on form attached, if a form is prescribed) issued by a surety meeting the requirements of Paragraph 5.1 of the General Conditions.

7.2 The Bid security of Successful Bidder will be retained until such Bidder has executed the Agreement, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Agreement and furnish the required contract security within fifteen days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of the seventh day after the Effective Date of the Agreement or the thirty-sixth day after the Bid opening, whereupon Bid security furnished by such Bidders will be returned. Bid security with Bids which are not competitive will be returned within seven days after the Bid opening.

8. Contract Times.

The number of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the term "Contract Times" is defined in paragraph 1.12 of the General Conditions) are set forth in the Agreement (or incorporated therein by reference to the attached Bid Form).

9. Liquidated Damages.

Provisions for liquidated damages, if any, are set forth in the Agreement.

10. Substitute and "Or-Equal" Items.

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in Paragraphs 6.7.1, 6.7.2 and 6.7.3 of the General Conditions and may be supplemented in the General Requirements.

11. Subcontractors, Suppliers, and Others

11.1 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers and other persons and organizations (including those who are to furnished the principal items of material and equipment) to be submitted to OWNER in advance of a specified date prior to the Effective Date of the Agreement, apparent Successful Bidder, and any other Bidder so requested, shall within five days of Notice of Award submit to OWNER a list of all such Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work for which such identification is required.

An OWNER or ENGINEER who after due investigation reasonably believes that a Subcontractor, Supplier, other person or organization is suspended, debarred or has otherwise been declared ineligible to perform this contract, may request that the Successful Bidder submit an acceptable substitute Subcontractor, Supplier, person or organization.

If apparent Successful Bidder declines to make any such substitution, OWNER may award the contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, and other persons and organizations.

11.2 In contracts where the Contract Price is on the basis of Cost-of-the-Work Plus a Fee, apparent Successful Bidder, prior to the Notice of Award, shall identify in writing to OWNER those portions of the Work that such Bidder proposes to subcontract and after the Notice of Award may only subcontract other portions of the Work with OWNER's written consent.

11.3 No CONTRACTOR shall be required to employ any Subcontractor, Supplier, other person or organization against who CONTRACTOR has reasonable objection.

12. Bid Form.

12.1 The Bid Form is included with the Bidding Documents; additional copies may be obtained from ENGINEER (or the Issuing Office).

12.2 All blanks on the Bid Form must be completed by printing in black ink or by typewriter. All other bids will be rejected as unresponsive. Bids which have been corrected by white out or cross out, and have not been initialed and dated will be rejected as unresponsive.

12.3 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.

12.4 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

12.5 All names must be typed or printed in black ink below the signature.

12.6 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).

12.7 The address and telephone number for communications regarding the Bid must be shown.

12.8 Evidence of authority to conduct business as an out-of-state business entity in the state where the Work is to be performed shall be provided in accordance with Paragraph 3 above. State contractor license number, if any, must also be shown.

13. Submission of Bids.

Bids shall be submitted at the time and place indicated in the Advertisement or Notice to Bidders and shall be enclosed in an opaque sealed envelope, marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the number of the bid (marked "**Proposal for Bid No. 09-06-27**"), the name and time of the bid opening, and name and address of Bidder and accompanied by the Bid security and other required documents specified on the Bid Form. If the Bid is sent through the mail or other delivery system the sealed envelope containing the bid shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it. Failure to comply with these requirements may result in the rejection of the bid as being unresponsive.

Bidders are responsible for submitting their bids to the appropriate location at or prior to the time indicated in the Notice to Bidders. **No bids will be accepted after the designated time or date indicated in the Notice to Bidders.** It is suggested that registered mail be used to submit bids. Delay in mail delivery is NOT an exception to the receipt of the bid.

14. Modification and Withdrawal of Bids.

14.1 Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to submitted at any time prior to the opening of Bids.

14.2 Where an unilateral error or mistake is discovered in a Bid, such Bid may be withdrawn after a showing of the following: (1) the mistake is known or made known to the OWNER and ENGINEER prior to the awarding of the contract or within three days after the opening of the Bid, whichever period is shorter; and (2) the price Bid was based on an error of such magnitude that enforcement would be unconscionable; and (3) 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 (4) 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, goods 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 papers, documents, or materials used in the preparation of the Bid sought to be withdrawn; and (5) it is possible to place the OWNER in status quo ante.

15. Opening of Bids.

Bids will be opened and (unless obviously non-responsive) read aloud publicly at the place where Bids are to be submitted. An abstract of the amounts of the base Bids and major alternates (if any) may be made available to Bidders after the opening of Bids. Bidders requesting copies of the bid results shall do so in writing to the OWNER and provide a stamped self-addressed envelope.

16. Bids to Remain Subject to Acceptance.

All Bids will remain subject to acceptance for forty-five (45) days after the day of the Bid opening, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to that date.

The OWNER reserves the right to reject all bids, or all bids for any one or more supplies or contractual services included in the proposed contract, when such rejection is in the best interest of the public.

After the low Bidder is notified that they are the apparent low Bidder, the following documents must be submitted to the Owner:

- A Work Plan, including a plan of operations, progress schedule, a sampling plan and a QA/QC plan.
- Proof of Availability of Insurance or Certificate of Insurance with endorsements.
- Preliminary project schedule.
- Minority-Owned Business Enterprise/Women-Owned Business Enterprise (MBE/WBE) utilization plan.

17. Award of Contract.

17.1 To the fullest extent permitted by law OWNER reserves the right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, non-responsive, unbalanced, or conditional Bids and to reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsible or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by OWNER. OWNER also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate, to the extent permitted by law, contract terms with the Successful Bidder. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

17.2 In evaluating Bids, OWNER will consider the qualifications of Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

17.3 OWNER may consider the operating costs, maintenance requirements, performance data and guarantees of major item of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Award.

17.4 OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of Bidders, to perform and furnish the Work in accordance with the Contract Documents to OWNER's satisfaction within the prescribed time.

17.5 If the contract is to be awarded, it will be awarded to lowest, responsive, responsible Bidder whose evaluation by OWNER indicates to OWNER that the award will be in the best interests of the Project.

17.6 If the contract is to be awarded, OWNER will give Successful Bidder a Notice of Award within forty-five (45) days after the day of the Bid opening.

17.7 Upon receiving Notice of Award, the awarded bidder shall submit the following executed documents to the Owner:

- The completed Agreement including all specified documents within the agreement.
- Construction Performance Bond
- Construction Payment Bond
- Certificate of Insurance as specified in the Supplemental Conditions, including copy of the proposed pollution liability policy.

18. Contract Security.

Paragraph 5.1 of the General Conditions and the Supplementary Conditions set forth OWNER's requirements as to performance and payment Bonds. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by the required performance and payment Bonds.

19. Signing of Agreement.

When OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within fifteen days thereafter CONTRACTOR shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER with the required Bonds. Within ten days thereafter OWNER shall deliver one fully signed counterpart to CONTRACTOR. Each counterpart is to be accompanied by a complete set of the Drawings with appropriate identification.

20. Prebid Conference.

A prebid conference will be held at 10:00 A.M. on the 24th day of August 2007 at the Project Site. The entrance to the Project Site is located at the intersection of Rinaldi Boulevard and Pine Street in the City of Poughkeepsie, Dutchess County, New York. Representatives of OWNER, ENGINEER and the New York State Department of Environmental Conservation will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. ENGINEER will transmit to all prospective Bidders of record such Addenda as ENGINEER considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

21. Sales and Use Taxes.

OWNER is exempt from New York State Sales and Use Taxes on materials and equipment to be incorporated in the Work (exemption No. 14-600-2385). Said taxes should not be included in the Contract Price. Refer to Supplementary Conditions SC-6.15 for additional information.

22. Retainage.

Provisions concerning retainage and CONTRACTOR'S rights to deposit securities in lieu of retainage are set forth in the Agreement.

23. Contracts to be Assigned.

OWNER has no executed contracts for materials and equipment to be provided for installation by the CONTRACTOR.

REFUND FORM

for

THE RETURN OF CONTRACT DOCUMENTS

(This form must accompany the returned documents.)

1. Bid No. 09-06-27

2. Name of Project: The DeLaval Property – Rinaldi Boulevard
   Environmental Restoration Program

3. Date of Bid Opening: September 14, 2007

4. Cost of Documents: $100.00/set x _____ sets = $

5. Name & Address of Bidder: _____

6. Name & Address of Non-Bidder: _____

7. Return Date of Documents: _____

8. Number of Sets: _____

(FOR OFFICE USE ONLY)

Project Manager: Keith J. Ziobron, P.E.

Approved for Payment and Amount: _____

REMARKS:

Business Office:

Date Paid: _____ Check No. _____

INFORMATION AVAILABLE TO BIDDERS

INFORMATION PLACED IN THIS SECTION IS NOT A PART OF THE CONTRACT DOCUMENTS.

SURFACE & SUBSURFACE INFORMATION

1. A number of surface soil samples were collected on the project site. In addition, a number of test pits and test borings (associated with monitoring wells) were installed in the vicinity of the work. The location of these surface soil samples, test pits, and borings are shown on Figures 2, 3 and 4, respectively, included following this page. Figure 5 has been included to depict the groundwater flow direction beneath the site, although the Contractor is cautioned that the groundwater elevations vary seasonally and are tidally influenced.

2. Logs of the test pits and test borings referred to above are included in the Contract Documents following the above referenced figures; but are not a part of the Contract Documents. Similarly, the analytical results and summary tables associated with the surface soil, subsurface soil, and groundwater samples collected as part of the Supplemental Investigation referenced below are included following the test pit and boring logs, but are not part of the Contract Documents. The availability of these logs and analytical summary tables is not intended to relieve Bidders of their obligation to make a thorough investigation of conditions below the surface of the ground and neither additional payment nor an extension of time will be made to the Contractor because the borings or test pits referred to above do not accurately represent the true nature of the subsurface conditions.

3. Bidders and prospective Bidders are hereby warned and put on notice that the borings referred to above were made for remedial investigation purposes only. They were not made for the purpose of informing Bidders and prospective Bidders as to subsurface conditions in the area of the work covered by this Contract and are not, in the opinion of the Engineer, sufficient or extensive enough to provide an accurate or reliable indication of subsurface conditions which might be encountered in the performance of this Contract.

4. Neither the Owner nor the Engineer has made any investigation of subsurface conditions in the area covered by the work to be performed under this Contract other than the borings and test pits referred to above, and, in bidding on this Contract, each Bidder acknowledges that he has made whatever investigation of subsurface conditions he had deemed necessary for the purpose of bidding. Permission for making borings of subsurface conditions will be arranged for by the Engineer upon receipt of a written request therefor.

REPORTS

The following reports are available for review at City of Poughkeepsie City Hall located at 62 Civic Center Plaza, Poughkeepsie, New York 12602 and at and Clough Harbour & Associates LLP offices located at III Winners Circle, Albany, New York 12205:

1. *Phase I Environmental Site Assessment – Procida Waterfront Property*, prepared by The Chazen Companies and dated December 28, 1999.

2. *Phase II Subsurface Investigation – DeLaval Property*, prepared by The Chazen Companies and dated May 2001.

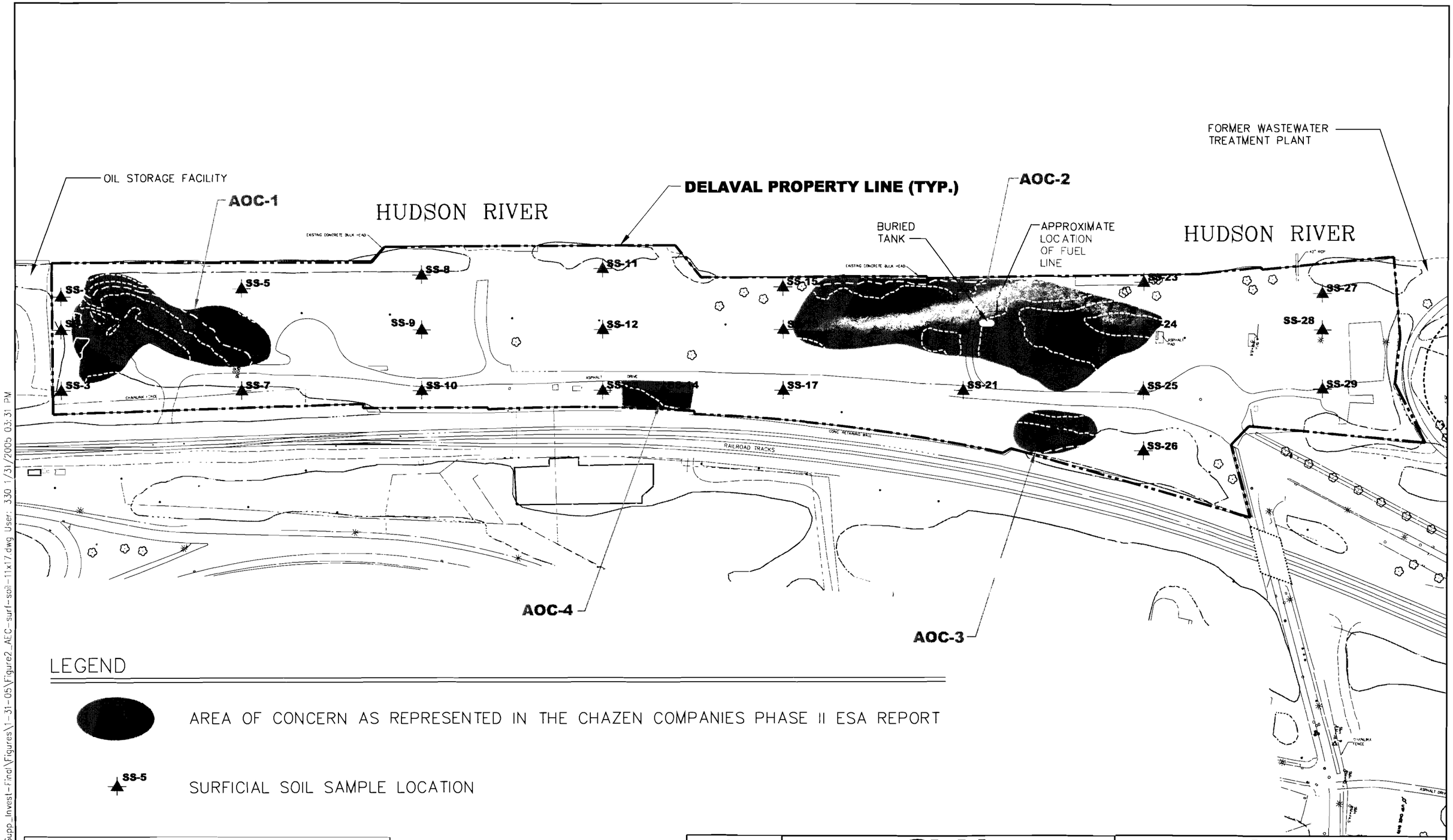
3. *Supplemental Investigation Summary Report – The DeLaval Property*, prepared by Clough Harbour & Associates LLP and dated January 2005.

4. *Final Remedial Alternatives Report – The DeLaval Property*, prepared by Clough Harbour & Associates LLP and dated January 2005.

5. *Environmental Restoration Record of Decision – Hudson River Waterfront DeLaval Property*, prepared by the New York State Department of Environmental Conservation and dated March 2005.

6. *Remedial Design Work Plan & Conceptual Design – The DeLaval Property*, prepared by Clough Harbour & Associates LLP and dated November 15, 2005.

Figures



LEGEND

AREA OF CONCERN AS REPRESENTED IN THE CHAZEN COMPANIES PHASE II ESA REPORT

SS-5 SURFICIAL SOIL SAMPLE LOCATION

NOTE:

BASEMAP PROVIDED FROM THE CHAZEN COMPANIES (TCC) PHASE SUBSURFACE INVESTIGATION REPORT, DATED MAY 2001.

0 150 300
Scale in feet

CLOUGH HARBOUR & ASSOCIATES LLP
3 Winners Circle, PO Box 5269, Albany, NY 12205
www.cloughharbour.com

11205.1011.1102 | DATE: JANUARY, 2005

FIGURE 2

SURFICIAL SOIL SAMPLE LOCATION PLAN AND AREAS OF ENVIRONMENTAL CONCERN

DEVAVAL PROPERTY
CITY OF POUGHKEEPSIE
DUTCHESS COUNTY, STATE OF NEW YORK

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OIL STORAGE FACILITY

AOC-1

HUDSON RIVER

DELAVAL PROPERTY LINE (TYP.)

AOC-2/3

BURIED TANK

APPROXIMATE LOCATION OF FUEL LINE

HUDSON RIVER

FORMER WASTEWATER TREATMENT PLANT

EXISTING CONCRETE BULK HEAD

TP-12 TP-13 TP-14 TP-1 TP-2 TP-3 TP-4 TP-5 TP-6

AT-1 AT-2 AT-3 AT-4 AT-5 AT-6

TP-42

TP-27 TP-28 TP-29 TP-34 TP-35 TP-36

AT-8 AT-7

RAILROAD TRACKS

CONC. RETAINING WALL

AOC-4

LEGEND

AREA OF CONCERN BASED ON SUPPLEMENTAL INVESTIGATION

TP-1 ENVIRONMENTAL EXPLORATORY TEST PIT

AT-1 ARCHEOLOGICAL TEST PIT

NOTE:

BASEMAP PROVIDED FROM THE CHAZEN COMPANIES (TCC) PHASE SUBSURFACE INVESTIGATION REPORT, DATED MAY 2001.

0 150 300

Scale in feet

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III Winners Circle, PO Box 5269, Albany, NY 12205
www.cloughharbour.com

11205.1011.1102

DATE: JANUARY, 2005

FIGURE 3

TEST PIT LOCATION PLAN AND AREAS OF ENVIRONMENTAL CONCERN

DEVAVAL PROPERTY
CITY OF POUGHKEEPSIE
DUTCHESS COUNTY, STATE OF NEW YORK

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OIL STORAGE FACILITY

AOC-1

HUDSON RIVER

DELAVAL PROPERTY LINE (TYP.)

AOC-2/3

BURIED TANK

APPROXIMATE LOCATION OF FUEL LINE

FORMER WASTEWATER TREATMENT PLANT

HUDSON RIVER

CHA-2

CHA-3

CHA-1

MW-1

AOC-4

RAILROAD TRACKS

LEGEND

AREA OF CONCERN BASED ON SUPPLEMENTAL INVESTIGATION

CHA-1 MONITORING WELL LOCATION

B-7 BORING LOCATION

NOTE:

BASEMAP PROVIDED FROM THE CHAZEN COMPANIES (TCC) PHASE SUBSURFACE INVESTIGATION REPORT, DATED MAY 2001.

0 150 300

Scale in feet

CLOUGH HARBOUR & ASSOCIATES LLP

III Winners Circle, PO Box 5269, Albany, NY 12205

www.cloughharbour.com

11205.1011.1102

DATE: JANUARY, 2005

FIGURE 4

MONITORING WELL AND BORING LOCATION PLAN AND AREAS OF ENVIRONMENTAL CONCERN

DEVAVAL PROPERTY

CITY OF POUGHKEEPSIE

DUTCHESS COUNTY, STATE OF NEW YORK

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OIL STORAGE FACILITY

AOC-1

HUDSON RIVER

DELAVAL PROPERTY LINE (TYP.)

AOC-2/3

FORMER WASTEWATER TREATMENT PLANT

BURIED TANK

APPROXIMATE LOCATION OF FUEL LINE

HUDSON RIVER

CHA-2 -0.57

CHA-3 -1.81

CHA-1 -0.88 (0.12)

CHA-4 -0.76

MW-1 -1.35

RAILROAD TRACKS

AOC-4

BENCH MARK
TOP OF HYDRANT
(12.49' AMSL)

LEGEND

AREA OF CONCERN BASED ON SUPPLEMENTAL INVESTIGATION

CHA-1 -0.88 — MONITORING WELL LOCATION

GROUNDWATER ELEVATION

-0.50 — GROUNDWATER CONTOUR (GROUNDWATER ELEVATIONS MEASURED ON 9-1-2004)

NOTE:

BASEMAP PROVIDED FROM THE CHAZEN COMPANIES (TCC) PHASE SUBSURFACE INVESTIGATION REPORT, DATED MAY 2001.

0 150 300
Scale in feet

CLOUGH HARBOUR & ASSOCIATES LLP
III Winners Circle, PO Box 5269, Albany, NY 12205
www.cloughharbour.com

11205.1011.1102

DATE: JANUARY, 2005

FIGURE 5

GROUNDWATER CONTOUR MAP AND AREAS OF ENVIRONMENTAL CONCERN

DEVAVAL PROPERTY
CITY OF POUGHKEEPSIE
DUTCHESS COUNTY, STATE OF NEW YORK

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Test Pit Logs

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** ATP-7
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: DeLaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 7/29/04 Start: 1:30 PM Finish: 3:30 PM
Excavation Contractor: Precision Industrial Maintenance, Inc.	Equipment: JD 310E 4X4

General Information:

Length: 45' Width: 4' Max. Depth: 9.5'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 6'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No (NYSDEC took photos)

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: Grab Sampling Time: 2:00 PM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.5'	Topsoil and organics
0.5' – 2'	Black FMC sand w/ silt, ash, slag and trace coal (sample S-1 taken)
2' – 4'	Gray silty clay w/ stones/cobbles
4' - 8'	Peat, some cow horns
8' – 9.5'	Gray fine silt, trace sand, trace clay

PID Readings/Test Pit Notes:

- No PID reading
- Sample ATP-7/S-1 taken at 2' per request of NYSDEC
- Possible structure foundation at East end of trench at approximately 8'

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP- 1
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: DeLaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/2/04 Start: 9:30 AM Finish: 10:10 AM
Excavation Contractor: Precision Industrial Maintenance, Inc.	Equipment: Kobelco SK 220 LC

General Information:

Length: 25' Width: 6' Max. Depth: 14'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 13'

Depth to Top of Waste: N/A Depth to Bottom of Waste: N/A

Description of Waste: N/A

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: Grab Sampling Time: 9:50 AM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7' – 12'	Brown, black sand & silt (dark soil) w/ some "lathe millings" (metal), trace brick, some stones, trace wood, trace metal, some "fire brick" type material, pressed yellow-brown sand throughout layer
12' – 14'	West end: Gray/black silt & gravel heavy petroleum odor (sample S-1 taken) East end: Pieces of slag w/ some brick

PID Readings/Test Pit Notes:

- Heavy petroleum odor
- PID reading of 25 PPM in gray layer at 12'-14'
- Sample TP-1/S-1 was taken at 12'-14' from the West end of the trench at 9:50 AM
- No PID reading from slag at East end of trench at 12'-14'
- Dark colored soil from 8'-12' below the ground surface throughout the length of the trench

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-2
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/2/04 Start: 10:30 AM Finish: 11:50 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 15'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 12'

Depth to Top of Waste: N/A Depth to Bottom of Waste: N/A

Description of Waste: N/A

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 1'	Topsoil and organics
1' – 2'	Brown soil and rocks
2' – 12'	Brown sandy soil w/ slag, stones, trace brick w/ pockets of asphalt roofing material
12' – 15'	FMC gravel, trace silt w/ cobbles & stones

PID Readings/Test Pit Notes:

- No PID Reading
- Trace amounts of stained/discolored soil throughout excavation
- Slight odor from asphalt roofing material but no PID reading
- Groundwater had no sheen or odor
- Fill appeared to stop in area of road

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-3
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/2/04 Start: 11:00 AM Finish: 11:30 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 25' Width: 6' Max. Depth: 12'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 10'

Depth to Top of Waste: N/A Depth to Bottom of Waste: N/A

Description of Waste: N/A

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0- 0.7'	Topsoil and organics
0.7' – 3'	Soil and some brick (fill)
3' – 10'	Brown soil (silt and FMC gravel) w/ stones and rocks
10' – 12'	FMC gravel w/ stones

PID Readings/Test Pit Notes:

- No evidence of soil staining throughout excavation
- No PID reading
- Top 3' of excavation appeared to be fill material w/ soil below
- East end of trench: less fill material
- West end of trench: (approximately15' from tree) began running into fill material, with more brick and stones encountered
- Soil appeared to be clean

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-4
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/2/04 Start: 11:40 AM Finish: 12:15 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 10' Width: 6' Max. Depth: 13'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 10'

Depth to Top of Waste: N/A Depth to Bottom of Waste: N/A

Description of Waste: N/A

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 1.5'	Topsoil and organics
1.5' – 3'	Concrete slab
3' – 11.5'	Slag & bricks, some soil
11.5' – 13'	Yellow-brown FM sand, trace silt/gravel
13'	Pieces of weathered shale

PID Readings/Test Pit Notes:

- Soil in excavation appeared to be relatively clean w/ no evidence of contamination
- Top 1.5' of excavation consisted of only dark soil w/ no odor and no PID reading
- South end of excavation is approximately 30' from tree

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-5
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/2/04 Start: 1:00 PM Finish: 1:45 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 13'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 8'

Depth to Top of Waste: N/A Depth to Bottom of Waste: N/A

Description of Waste: N/A

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake with orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: Grab Sampling Time: 1:30 PM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.5'	Topsoil and organics
0.5' – 4'	Brown soil and cobbles, trace metal
4' – 5'	Concrete slab
5' – 11'	Slag w/ bricks, some soil
11' – 13'	Gray fine sand, trace silt w/slight black staining in pockets (sample S-1 taken)

PID Readings/Test Pit Notes:

- No PID reading
- Sample:TP-5/S-1was obtained from 12' at 1:30 PM
- Gray sand/silt materialat 11'-13' contained pockets of slight black staining with trace of odor

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-6
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/2/04 Start: 1:50 PM Finish: 2:30 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 14'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 9'

Depth to Top of Waste: Surface Depth to Bottom of Waste: 4'

Description of Waste: Metal and a Tire

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake with orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: Grab Sampling Time: 2:00 PM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 4'	Concrete, soil, metal, tire, some soil (dark brown)
4' – 5'	Black/brown sandy gravel layer w/ slight staining (sample S-1 taken)
5' – 6'	Fill brick/soil
6' – 13'	Gray silt, trace sand w/ FMC gravel & cobbles

PID Readings/Test Pit Notes:

- No PID reading in excavation except for the sampled layer at 4' - 5' which had a PID reading of 18 PPM
- Groundwater had solvent type odor and slight sheen but no PID Reading
- Sample: TP-6/S-1 taken at 5' in the excavation at 2:00 PM

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-7
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/2/04 Start: 2:35 PM Finish: 3:15 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 14'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 9'

Depth to Top of Waste: 6' Depth to Bottom of Waste: 12'

Description of Waste: Wood, metal, glass and tile

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake with orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 5'	Soil and large pieces of concrete and brick
5' – 6'	Dark soil layer (silt and sand)
6' – 12'	Fill material consisting of slag, brick, wood, metal, glass, tile
12' – 14'	gray silty sand

PID Readings/Test Pit Notes:

- No PID reading
- Dark soil layer at 5' - 6' had no odor or PID reading

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-8
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/3/04 Start: 7:30 AM Finish: 8:15 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 20' Width: 6' Max. Depth: 15'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 10'

Depth to Top of Waste: 0.7' Depth to Bottom of Waste: 14'

Description of Waste: Tires, rims, wood, plastic, glass, metal and a drum

Drums Encountered: ☒ Yes ☐ No No. of Drums: 1 Materials in Drums?: ☐ Yes ☒ No

Description/Condition of Drums: Rusted/crushed - only bottom 1/3 of drum present, no PID reading

Location Marked: ☒ Yes ☐ No With: stake with ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 7:45 AM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7' – 8'	Waste and soil (concrete, tires, rims, wood plastic, glass (1 drum), metal, pvc pool liner)
8' – 14'	Black oil/stained soil w/ silt & gravel, plastic, trace wood, many metal shavings and white grease like lubricant mixed in w/ metal (sample S-1 taken)
14' – 15'	Gray silt, trace sand, trace clay

PID Readings/Test Pit Notes:

- Sample TP-8/S-1 was taken from 10' in the excavation at 7:45 AM w/ a PID reading of 58 PPM
- Soil at 10' -14' contained heavy black staining
- Groundwater had very heavy petroleum odor

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-9
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/3/04 Start: 8:20 AM Finish: 8:45 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 12'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 10'

Depth to Top of Waste: N/A Depth to Bottom of Waste: N/A

Description of Waste: N/A

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake with orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: Grab Sampling Time: 8:30 AM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 1'	Topsoil and organics
1' – 5'	Brown soil w/ trace wood, cobbles, trace brick
5' – 6'	Black silty stained soil (fine) (sample S-1 taken)
6' – 8'	Brown soil w/ cobbles and brick
8' – 11'	Black sand/gravel and slag (20 ppm) Saturated/ black, stained, oily black top Type odor
11' – 12'	Gray silt/ trace sand

PID Readings/Test Pit Notes:

- Sample TP-9/S-1 was taken from 5' in the excavation at 8:30 AM. The sample consisted of a black fine silty soil with machine oil like odor. It had a PID reading of 10.1 PPM.
- Encountered groundwater in the excavation had a heavy black-top like odor w/ a PID reading of 25 PPM
- Excavation is approximately 30' from the river

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-10
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/3/04 Start: 9:00 AM Finish: 9:30 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 12'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 10'

Depth to Top of Waste: N/A Depth to Bottom of Waste: N/A

Description of Waste: N/A

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake with orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 1'	Topsoil and organics
1' – 2'	Brown soil, trace wood
2' – 5'	Brown/yellow sand, broken fire brick, pieces of red brick
5' – 12'	Slag, trace brick, some wood, heavy petroleum odor and staining (similar to TP's 8 & 9)
12'	gray silt, trace sand

PID Readings/Test Pit Notes:

- PID reading of 25 PPM in slag layer at 5' - 12'
- Large amounts of black staining throughout 5'-12' layer of excavation
- Encountered groundwater was black w/ a sheen and had a heavy petroleum-like odor
- Excavation was located approximately 25' from the river

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-11
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/3/04 Start: 9:45 AM Finish: 10:00 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 10.5'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 8.5'

Depth to Top of Waste: N/A Depth to Bottom of Waste: N/A

Description of Waste: N/A

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake with orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 2'	Topsoil and organics
2' – 5'	Brown/black soil w/ layers of yellow/brown fire brick type material
5' – 7.5'	Yellow/brown silt, sand and gravel
7.5' – 8.5'	Gray silt, trace gravel, trace clay with black soil staining present 25 ppm, petroleum odor – oil bands
8.5' – 10.5'	Large pieces of broken shale

PID Readings/Test Pit Notes:

- Soil layer at 5'-7.5' appeared to be very clean
- Groundwater encountered at 8.5' w/ very heavy petroleum odor, staining and oil beads present. PID reading of 25 PPM
- Excavation approximately 25' from river

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-12
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/3/04 Start: 10:15 AM Finish: 10:30 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 3'

Groundwater in Pit: ☐ Yes ☒ No If yes, what depth: _____

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake with orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 2'	Soil, brown silt, trace sand, clean with some concrete
2'	Bedrock (shale)

PID Readings/Test Pit Notes:

- No PID reading

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-13
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/3/04 Start: 10:30 AM Finish: 11:00 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 10'

Groundwater in Pit: ☐ Yes ☒ No If yes, what depth: N/A

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake with ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile		**PID Readings/Test Pit Notes:**
0 – 5'	Topsoil, organics w/ root mass and soil	- No PID readings - Soil appeared very clean w/ no staining or odor
5' – 10'	Brown FMC gravel and silt, 4" cobbles w/ trace of slag	

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-14
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/2/04 Start: 11:10 AM Finish: 11:45 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 7'

Groundwater in Pit: ☐ Yes ☒ No If yes, what depth: N/A

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.5'	Dark topsoil and organics
0.5' – 2'	Yellow silt, trace sand w/ FMC gravel & stones
2' – 7'	Light brown silt w/ FMC gravel, stones & cobbles (trace fine sand) "till" like – very hard

PID Readings/Test Pit Notes:

- No PID readings
- Soil appeared very clean w/ no staining or odors, soil appears to be natural
- Discontinued excavation at 7' due to soil being very hard and compact - appeared to be native soil

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-15
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/3/04 Start: 12:30 PM Finish: 1:00 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 15'

Groundwater in Pit: ☐ Yes ☒ No If yes, what depth: N/A

Depth to Top of Waste: 8" Depth to Bottom of Waste: 15"

Description of Waste: Metal shavings and automobile fuel tank

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake with orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7' – 15'	Brown/black silt, trace sand, w/ metal filings/shavings, yellow brick (sand-stone like), trace slag, trace cobbles
15'	Bedrock (shale)

PID Readings/Test Pit Notes:

- No PID readings were encountered
- No water was encountered in excavation
- Automobile fuel tank was encountered at approximately 2'-3'. It was crushed, rusty and dry.
- The soil layer from 0.7'-15' was very consistant with a large amount of metal filings/shavings distributed throughout

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-16
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/3/04 Start: 1:00 PM Finish: 1:50 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 20' Width: 6' Max. Depth: 19'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 15'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☒ Yes ☐ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: Grab Sampling Time: 1:30 PM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 1'	Topsoil and organics
1' – 15'	Brown/black soil w/ yellow fire brick, trace slag, trace millings (metal), trace wood
15' – 19'	FMC gravel w/ cobbles, stones & sand, trace slag. Black/gray in color (very wet), some staining (sample S-1 taken)
19'	Gray silt, trace sand

PID Readings/Test Pit Notes:

- Sample TP-16/S-1 taken from 15' in the excavation at 1:30 PM. Sample had staining and heavy petroleum odor but no PID readings

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-17
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/3/04 Start: 2:00 PM Finish: 2:30 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 19'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 15'

Depth to Top of Waste: 1' Depth to Bottom of Waste: 19'

Description of Waste: Fill w/ wood, metal, tires, pipes and plastic

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 1'	Topsoil and organics
1' – 19'	Brown silty soil, trace sand, some FMC gravel w/ stones & cobbles, some wood, some metal, tires, pipes, plastic, bricks
19'	Gray silt, trace sand

PID Readings/Test Pit Notes:

- Soil in the excavation from 1-15' appeared to be clean w/ no staining, no odor and no PID reading

- Soil in the excavation below 15' (water level) was stained gray/black in color w/ petroleum odor but had no PID readings

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-18
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/3/04 Start: 2:30 PM Finish: 3:00 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 15'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 11'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 1'	Topsoil and organics
1' – 14'	Soil (silt w/ some sand, some FMC gravel), concrete, bricks, tires, wood, slag, fire bricks, some asphalt
14' - 15'	Gray silt, trace sand, trace clay

PID Readings/Test Pit Notes:

- No odor or PID reading in soil above 11' (groundwater level)
- Soil below 11' (groundwater level) had slight petroleum odor - but no PID readings

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-19
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/4/04 Start: 7:30 AM Finish: 12:00 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 124' Width: 6' Max. Depth: 8' (4' deep for most of excavation)

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 4.5'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stakes w/ orange ribbons

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: Grab Sampling Time: 7:45 AM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7' – 3'	Brown soil w/ cobbles, brick, some wood
3' – 4'	Heavy staining w/ visible (oil) product w/ bricks, little soil (sample S-1 taken)
4'	Concrete slab

PID Readings/Test Pit Notes:

- Encountered soil from 0.7'-3' appeared to be clean w/ no PID readings
- Sample TP-19/S-1 taken from a depth of 3.5' at 7:45 AM and appeared to contain # 6 oil
- Encountered a Fuel line (6" steel pipe with concrete on both sides) running the length of the south side of the trench at the 3.5' - 4' level.
- Heavy oil soaking was encountered on both sides of trench directly on top of concrete slab
- Excavated to 8' on East end of trench
  - at 4' - 8' encountered heavy cobbles /stones in oil soaked water.
  - at 8' encountered gray silt w/ oil staining

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-20
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/4/04 Start: 12:30 PM Finish: 1:45 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 10' Width: 6' Max. Depth: 8'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 4.5'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: Grab Sampling Time: 12:40 PM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7' – 6'	Brown stained soil and slag
6' – 8'	FMC heavily stained sand and gravel w/ cobbles (sample S-1 taken)

PID Readings/Test Pit Notes:

- PID reading of 12 PPM
- Encountered groundwater at 4.5' was very black w/ a heavy petroleum odor
- Sample TP-20/S-1 was taken at 7'
- Excavation was approximately 15' from river

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-21
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/4/04 Start: 1:00 PM Finish: 1:25 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 10' Width: 6' Max. Depth: 9'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 4'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.5'	Topsoil and organics
0.5'– 5'	Brown soil w/ some black staining and some bricks
5' – 9'	Fill material – wood, brick, slag, concrete, metal, cobbles
9'	Gray silt & FMC gravel (did not appear to be stained)

PID Readings/Test Pit Notes:

- PID reading of 5.5 PPM
- Light staining was observed in the soil w/ oil beads (product) visible on groundwater
- Excavation was approximately 10' from river

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-22
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/4/04 Start: 1:30 PM Finish: 1:40 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 10' Width: 6' Max. Depth: 9'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 6'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.7	Topsoil and organics
0.7'– 5'	Brown soil, brick
5' – 9'	Slag, trace brick, some soil

PID Readings/Test Pit Notes:

- PID reading of 9.3 PPM
- Encountered groundwater at 6' had a petroleum odor
- Excavation was approximately 15' from river

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-23
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/4/04 Start: 1:40 PM Finish: 2:10 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 16' Width: 7' Max. Depth: 8'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 5.5'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 1:55 PM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.5'	Topsoil and organics
0.5'– 5'	Brown soil, bricks
5' – 6'	FMC Sand and gravel w/ silt (sample S-1 taken)
6' – 8'	Brick, stones

PID Readings/Test Pit Notes:

- PID reading of 31.6 PPM
- Sample TP-23/S-1 was taken from a depth of 5' at 1:55 PM
- Encountered groundwater at 5.5' had a petroleum odor and oily sheen
- Excavation was approximately 20' from river

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-24
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/4/04 Start: 2:15 PM Finish: 2:45 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 20' Width: 6' Max. Depth: 14'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 7'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 2:30 PM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7'– 13.5'	Soil, bricks, stone, wood, slag
13.5' – 14'	Gray silt, trace sand (sample S-1 taken)

PID Readings/Test Pit Notes:

- PID reading of 2.2 PPM
- Encountered groundwater at approximately 7' appeared to contain oil (product) and had a petroleum odor
- Sample TP-24/S-1 was taken at a depth of 14' at 2:30 PM
- Excavation was approximately 50' from the river
- "Clean" water appeared to be entering excavation from the south w/ what appeared to be contaminated water entering from the north

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-25
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/4/04 Start: 2:50 PM Finish: 3:30 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 11'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 8'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.5'	Topsoil and organics
0.5'– 5.5'	Brown soil, some brick, concrete, fine slag
5.5' – 10'	Coarse slag (appeared to be oil saturated), large stones and wood
10' – 11'	gray silt, trace sand

PID Readings/Test Pit Notes:

- PID reading of 17.3 PPM in deeper levels of the excavation
- Encountered groundwater at approximately 8' had a oily sheen on it w/ a petroleum odor
- Excavation was approximately 15' from access road

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-26
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/5/04 Start: 7:20 AM Finish: 8:05 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 42' Width: 6' Max. Depth: 11'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 6'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile		PID Readings/Test Pit Notes:
		- No PID readings encountered
0 – 0.7'	Topsoil and organics	- Soil as well as encountered groundwater appears clean with no odors or evidence of possible contanination
0.7'– 5'	Soil, Brick, wood, concrete	- Black organic material encountered above silt layer
5' – 10'	Stone, slag	
10' – 11'	Gray silt, trace sand	

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-27
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/5/04 Start: 8:05 AM Finish: 9:00 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 17' Width: 6' Max. Depth: 10'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 4'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7'– 4'	Soil, brick, concrete
4' – 9.5'	slag, stone
9.5' – 10'	Silt, trace sand

PID Readings/Test Pit Notes:

- No PID readings were encountered
- No apparent contamination was present in either the soil or groundwater encountered in this excavation
- Encountered groundwater at 4' had no sheen or no odor

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-28
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/5/04 Start: 9:00 AM Finish: 10:35 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 70' Width: 6' Max. Depth: 11'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 5'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 9:10 AM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7'– 5'	Soil, brick, concrete
5' – 10'	Slag, stone (sample S-1 taken)
10' – 11'	Silt, trace sand

PID Readings/Test Pit Notes:

- No PID readings were encountered
- No appearent contamination was present in either the soil or the groundwater encountered in this excavation
- Sample TP- 28/S-1 was taken from a depth of 6' in the excavation

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-29
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/5/04 Start: 10:35 AM Finish: 11:15 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 20' Width: 6' Max. Depth: 11'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 5'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7'– 3.5'	Bricks, soil
3.5' – 10.5'	Slag, stones
10.5' – 11'	Silt, trace sand

PID Readings/Test Pit Notes:

- No PID readings were encountered
- No visible soil staining was observed
- Encountered groundwater at 5' had oil sheen
- A slight petroleum odor was noticed

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-30
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/5/04 Start: 11:20 AM Finish: 11:30 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 20' Width: 6' Max. Depth: 4'

Groundwater in Pit: ☐ Yes ☒ No If yes, what depth: _____

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 11:30 AM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile		**PID Readings/Test Pit Notes:**
0 – 0.7'	Topsoil and organics	- PID reading of 6.3 PPM - Heavy oil staining observed in 0.7'-4' layer - Discontinued excavation due to large concrete foundations in excavation area - Sample TP-30/S-1 taken from a depth of 3'
0.7'– 4'	Soil and brick (sample S-1) taken	

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-31
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/5/04 Start: 11:30 AM Finish: 12:00 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 8' Width: 8' Max. Depth: 6'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 5'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7'– 6	Brick walls
	Concrete Floor

PID Readings/Test Pit Notes:

- No PID readings were encountered
- Encountered groundwater at 5' had an oil sheen
- Encountered soils had slight oil staining

NOTE:
This excavation appeared to have discovered some sort of buried vault or room with brick walls. It is assumed to be an old boiler room due to use of fire bricks in walls.

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-32
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/5/04 Start: 12:50 PM Finish: 1:15 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 12' Width: 6' Max. Depth: 8'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 8'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7'– 2.5'	Brown soil, bricks
2.5' – 3'	Concrete slab
3' – 6'	Brown soil, stones
6' – 8'	Silt, sand

PID Readings/Test Pit Notes:

- PID reading of 14.3 PPM
- Encountered black staining in soil at a depth of 6'
- Encountered groundwater at a depth of 8' with oil sheen and petroleum odor.

Clough, Harbour & Associates LLP Test Pit Log	Test Pit No.: TP-33
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/5/04 Start: 1:15 PM Finish: 1:45 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 6' Width: 6' Max. Depth: 7'

Groundwater in Pit: ☐ Yes ☒ No If yes, what depth: _____

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7'– 1.2'	Concrete slab
1.2' – 7'	Brown soil, bricks, slag, concrete

PID Readings/Test Pit Notes:

- No PID readings were encountered
- Slight oil staining was observed on encountered soils
- Groundwater was not encountered due to difficulty in excavating in this area because of numerous buried foundations

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-34
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/5/04 Start: 1:45 PM Finish: 2:20 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 20' Width: 6' Max. Depth: 10'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 6'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: Brick

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 2:10 PM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 1'	Topsoil and organics
1' – 9'	Brick, brown soil, wood
9' – 10'	Silt, trace sand (sample S-1 taken)

PID Readings/Test Pit Notes:

- PID reading of 6.0 PPM
- Encountered oil staining in soil w/ strong petroleum odor
- Encountered groundwater at 6' with oil sheen
- Sample TP-34/S-1 was taken from a depth of 9' at 2:10 PM
- Excavation was 30' from river

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-35
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/5/04 Start: 2:20 PM Finish: 2:50 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 10'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 9'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 2:35 PM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7' – 9'	Brick, Brown soil
9' – 10'	Silt, trace sand (sample S-1 taken)

PID Readings/Test Pit Notes:

- PID reading of 8.0 PPM
- Encountered groundwater at depth of 9' had no oil sheen
- Black staining was observed in encountered soil
- Sample TP-35/S-1 was taken from a depth of 9' at 2:35 PM
- Excavation was approximately 20' from the river

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** ATP-4
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: DeLaval Property AOC-1
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 7/28/04 Start: 9:30 PM Finish: 12:00 PM
Excavation Contractor: Precision Industrial Maintenance, Inc.	Equipment: JD 310E 4X4

General Information:

Length: 89' Width: 3' Max. Depth: 12'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 8'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: N/A Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: N/A

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: Grab Sampling Time: 10:00 PM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.5'	Topsoil and organics
0.5' – 2'	Brown silty soil w/ concrete and bricks
2' – 3'	Pockets of black silty soil (sample S-1 taken)
3' -12'	Slag (consistency was finer near 3' and becoming more coarse as approaching 12')
12'	Silt, trace sand

PID Readings/Test Pit Notes:

- ATP-4/S-1 sample had PID reading of 144 PPM
- Sulfur odor from slag at approximately 5'
- Sheen and petroleum odor on groundwater at approximately 8'
- Slag within groundwater had PID reading of 42 PPM
- silt and sand at 12' had PID reading of 34 PPM

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-36
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-2
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/5/04 Start: 2:50 PM Finish: 3:30 PM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 16' Width: 6' Max. Depth: 12'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 11'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.5'	Topsoil and organics
0.5'– 11'	Brown soil, brick, concrete, wood, steel and slag
11' – 12'	Gray silt, trace sand

PID Readings/Test Pit Notes:

- No PID readings were encountered
- Small areas of oil stained soil were encountered in excavation
- Encountered groundwater at a depth of 11' had no oil sheen

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-37
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-3
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/6/04 Start: 7:15 AM Finish: 7:50 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 20' Width: 6' Max. Depth: 17'

Groundwater in Pit: ☐ Yes ☒ No If yes, what depth: _____

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 7:25 AM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7'– 7'	Brown soil, concrete, wood, brick
7' – 9'	Brown silt, sand (sample S-1 taken)
9' – 11'	Gray silty clay w/ FMC gravel and cobbles
11' – 17'	Brown silty clay with gravel and cobbles

PID Readings/Test Pit Notes:

- PID reading of 0.9 PPM
- Encountered some staining of soils w/ a petroleum odor
- Encountered a heavier contamination/petroleum odor in the 9' - 11' layer
- No groundwater was encountered in this excavation
- Sample TP-37/S-1was taken from a depth of 9' at 7:25 AM

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-38
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-3
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/6/04 Start: 8:00 AM Finish: 8:25 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 15' Width: 6' Max. Depth: 8'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 7'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 8:15 AM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 1'	Topsoil and organics
1' – 1.5'	Fill material
1.5' – 2'	Brown sand
2' – 3'	Soil, cobbles
3' – 4'	Crushed slag
4' – 5'	"Black Layer," silt, gravel, with product
5' – 8'	Gray silt, sand (sample S-1 taken)

PID Readings/Test Pit Notes:

- PID reading of 19.3 PPM
- Heavy petroleum odor was present in excavation
- Heavy staining was encountered in soils of the excavation
- Encountered groundwater at 7' has visible free product on it's surface
- Sample TP-38/S-1was taken at a depth of 6' at 8:15 AM

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-39
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-3
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/6/04 Start: 8:25 AM Finish: 9:15 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 25' Width: 6' Max. Depth: 12.5'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 12'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 8:50 AM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 1'	Topsoil and organics
1' – 4'	Brown soil, trace brick, trace metal, silt and gravel
4' – 4.7'	Concrete slab
4.7' – 6'	Crushed slag
6' – 9'	Brown silt, sand, gravel
9' – 12.5'	Gray silty clay (sample S-1 taken)

PID Readings/Test Pit Notes:

- PID reading of 15.7 PPM
- Heavy petroleum odor was present in excavation
- Free product was encountered in both the soil and groundwater of the excavation
- Sample TP-39/S-1was taken at a depth of 12' at 8:50 AM
- Excavation was approximately 15' from railroad

Clough, Harbour & Associates LLP **Test Pit Log**	**Test Pit No.:** TP-40
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-3
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/6/04 Start: 9:15 AM Finish: 10:15 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 20' Width: 6' Max. Depth: 6'

Groundwater in Pit: ☐ Yes ☒ No If yes, what depth: _____

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☐ Yes ☒ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7'– 6'	Slag, brick, brown soil, concrete, rocks
	Concrete slab

PID Readings/Test Pit Notes:

- No PID readings were encountered
- Unable to excavate beyond a depth of 6' to investigate for potential contamination due to the fact that a thick concrete pad was encountered at that depth
- Excavations were attempted in 4 different locations to avoid the concrete pad - attempts were unsuccessful

NOTE:
Contaminants assumed to be below 6' as they were at the other locations.

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-41
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-4
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/2/04 Start: 10:15 AM Finish: 10:55 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 30' Width: 6' Max. Depth: 8'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 7'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 10:25 AM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.5'	Topsoil and organics
0.5'– 4'	Brown soil, stones, concrete, fill material, brick
4' – 8'	Silt w/ trace of clay, FMC gravel (sample S-1 taken)

PID Readings/Test Pit Notes:

- PID reading of 30.9 PPM
- Sample TP-41/S-1was taken from a depth of 6.5'
- Encountered groundwater at 7' had a sheen on its surface
- Encountered soils in the excavation contained slight staining
- A non-petroleum odor (solvent-like) was encountered in the excavation
- No evidence of contamination was observed at the north end of the excavation

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-42
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-4
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/6/04 Start: 11:00 AM Finish: 11:30 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 20' Width: 8' Max. Depth: 9'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 8'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☒ Yes ☐ No

Sampling Method: grab Sampling Time: 11:20 AM

Sample Analyses: VOC's, SVOC's, PCB's, RCRA 8 Metals No. of Bottles: 2

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7' – 3'	Slag, stone, brown soil, brick
3' – 4'	Concrete slab
4' – 5'	Slag, stones, brown soil, brick
5' – 9'	FMC gravel, MC sand and silt, cobbles (sample S-1 taken)

PID Readings/Test Pit Notes:

- No PID readings were encountered
- No staining was observed in the encountered soils of the excavation
- No free product was observed in the groundwater encountered at 8' in the excavation
- A mild solvent-like odor was encountered in the excavation
- Sample TP-42/S-1was taken from a depth of 7' at 11:20 AM
- A brick wall was encountered running along the East side of the excavation

Clough, Harbour & Associates LLP Test Pit Log	**Test Pit No.:** TP-43
Project Name: DeLaval Property - Supplemental Investigation	Test Pit Location: Delaval Property AOC-4
Project Location: City of Poughkeepsie, New York	Logged By: J. Herrick
Project Number: 11205.1005.1102	Date: 8/6/04 Start: 11:30 AM Finish: 12:00 AM
Excavation Contractor: Precision	Equipment: Kobelco SK 220 LC

General Information:

Length: 20' Width: 6' Max. Depth: 10'

Groundwater in Pit: ☒ Yes ☐ No If yes, what depth: 9'

Depth to Top of Waste: NA Depth to Bottom of Waste: NA

Description of Waste: NA

Drums Encountered: ☐ Yes ☒ No No. of Drums: NA Materials in Drums?: ☐ Yes ☐ No

Description/Condition of Drums: NA

Location Marked: ☒ Yes ☐ No With: Stake w/ orange ribbon

Pictures Taken: ☒ Yes ☐ No

Sampling Information:

Sample Collected: ☐ Yes ☒ No

Sampling Method: _____ Sampling Time: _____

Sample Analyses: _____ No. of Bottles: _____

Test Pit Profile

0 – 0.7'	Topsoil and organics
0.7'– 1'	Crushed slag
1' – 9'	Soil, slag, stones, cobbles
9' – 10'	Gray silt, trace sand

PID Readings/Test Pit Notes:

- PID reading of 23.4 PPM
- No staining was observed in the encountered soils of the excavation
- A slight odor was encountered in the groundwater at the 9'-10' depths of the excavation
- No free product was observed on the surface of the encountered groundwater of the excavation

Boring Logs

CLOUGH HARBOUR & ASSOCIATES LLP

PROJECT NUMBER: 11205.1011.1102 August 16, 2004

DeLaval Property
SUBSURFACE LOG
HOLE NUMBER B1

LOCATION: Poughkeepsie, New York

CLIENT: City of Poughkeepsie

CONTRACTOR: Aquifer Drilling & Testing, Inc.

DRILLER: INSPECTOR: J. Herrick

START DATE and TIME: 8/16/2004 4:00:00 PM

FINISH DATE and TIME: 8/16/2004 5:25:00 PM

SURFACE ELEV: CHECKED BY: S. Smith

DRILL FLUID: None DRILLING METHOD: Hollow Stem Augers

WATER LEVEL OBSERVATIONS DURING DRILLING	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per on Split Spoon Sampler	"N" Value or RQD%	DEPTH (Feet)	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	2	1.5	4-4-3-4	7		**SILT**, trace f. sand, yellow fire brick, metal filings, black/brown, moist **(FILL)**			
S2	2	1.5	6-4-4-6	8		**SILT**, trace f. sand, trace solid black tar, black/brown, moist **(FILL)**		Slight staing of soil observed, no odor or PID readings.	
S3	2	0.8	4-1-2-1	3	5	**SILT**, trace f. sand, trace f.c. gravel, black/brown, moist **(FILL)**		Moderate tar like odor noted.	
S4	2	1	2-2-3-3	5		**SILT**, trace f.m.c. sand, trace f.c. gravel, trace slag, black/brown, moist **(FILL)**			
S5	2	0.4	2-1-1-2	2		**f.m.c. SAND and Clayey SILT**, Some Cobbles, brown/black, moist **(FILL)**			
S6	2	0.8	3-1-1-2	2	10	**SILT**, Some Ash, Some Slag, little brick, brown/black, moist **(FILL)**			
S7	2	0.9	2-1-1-2	2		**SLAG**, trace silt, black, moist **(FILL)**			
S8	2	1	2-2-1-4	3	15	**SLAG**, trace silt, black, moist **(FILL)**			
S9	2	1.4	5-9-6-5	15		**f. SAND and SILT**, Some Slag, gray, moist **(FILL)**			
S10	2	1.8	3-3-13-50	16		**f. SAND and SILT**, Some Weathered Shale (at bottom), gray, moist **(SM)**			
					20	End of Boring at 20 ft			

CLOUGH HARBOUR & ASSOCIATES LLP

PROJECT NUMBER: 11205.1011.1102 August 16, 2004

DeLaval Property
SUBSURFACE LOG
HOLE NUMBER B2

LOCATION: Poughkeepsie, New York

CLIENT: City of Poughkeepsie

CONTRACTOR: Aquifer Drilling & Testing, Inc.

DRILLER: INSPECTOR: J. Herrick

START DATE and TIME: 8/17/2004 9:00:00 AM

FINISH DATE and TIME: 8/17/2004 9:45:00 AM

SURFACE ELEV: CHECKED BY: S. Smith

DRILL FLUID: None DRILLING METHOD: Hollow Stem Augers

WATER LEVEL OBSERVATIONS DURING DRILLING	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	2	1.5	2-3-4-3	7				**SILT**, trace f.m. sand, trace f.c. gravel, trace glass, trace brick, brown, mottled, moist **(FILL)**			
										No odor, no PID reading, no staining	
S2	2	1.1	4-5-5-4	10							
								f. SAND and SILT, Some f. Gravel, little cobbles, trace wood, brown, moist **(FILL)**		No odor, no staining	
S3	2	1.6	4-6-7-9	13		5		**SILT**, black, moist **(FILL)**		No odor, no staining	
								f. SAND and SILT, Some f. Gravel, trace organics, gray, wet **(FILL)**		Heavy petroleum odor, PID = 10 ppm, heavy staining	
S4	2	1.6	3-3-2-3	5				**SILT**, black, wet **(FILL)**			
								SILT, and SLAG, black, wet **(FILL)**		PID = 44.4 ppm, heavy odor and staining	
S5	2	0.8	4-4-4-3	8							
						10				PID = 46 ppm, heavy odor and staining, sheen on water	
S6	2	0.2	2-2-2-2	4							
								CLAY and SILT, trace organics, gray, moist **(CL/ML)**		PID = 27.8 ppm, heavy odor and staining	
S7	2	0.9	1-1-1-1	2							
										PID = 6.0 ppm, heavy petroleum odor and staining	
S8	2	1.2	1-1-1-1	2		15					
								End of Boring at 16 ft		PID = 0.0 ppm, no odor, no staining	
						20					

CLOUGH HARBOUR & ASSOCIATES LLP

PROJECT NUMBER: 11205.1011.1102 August 16, 2004

DeLaval Property
SUBSURFACE LOG
HOLE NUMBER B3

LOCATION: Poughkeepsie, New York

CLIENT: City of Poughkeepsie

CONTRACTOR: Aquifer Drilling & Testing, Inc.

DRILLER: INSPECTOR: J. Herrick

START DATE and TIME: 8/17/2004 1:30:00 PM

FINISH DATE and TIME: 8/17/2004 2:30:00 PM

SURFACE ELEV: CHECKED BY: S. Smith

DRILL FLUID: None DRILLING METHOD: Hollow Stem Augers

WATER LEVEL OBSERVATIONS DURING DRILLING	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	2	1.3	4-14-10-6	24				**f.m. SAND**, Some Cobbles, little brick, trace silt, brown, moist **(FILL)**		No visual, olfactory, of photoionic evidence of contamination in boring.	
S2	2	1	6-3-3-2	6				**f. SAND**, AND SILT, Some Cinders, little ash, little coal, brown/black, moist **(FILL)**			
S3	2	0.2	1-1-1-1	2		5		**SILT**, AND SLAG, wet **(FILL)**			
S4	2	0.4	1-WH-WH-1					**SLAG**, Some f. c. Gravel, trace silt, brown, wet **(FILL)**			
S5	2	0.2	WH-WH-WH -WH					**SLAG**, trace f. c. gravel, brown, wet **(FILL)**			
S6	2	1.3	WH-WH-WH -WH			10		**SILT**, Some Slag, brown, moist **(FILL)**			
S7	2	1.7	3-1-1-1	2				**SILT**, trace clay and organics, gray, moist **(ML)**			
								End of Boring at 14 ft			
						15					
						20					

SUBSURFACE LOG 11205 LOGS.GPJ UPDATEDCHA.GDT 9/12/06

CLOUGH HARBOUR & ASSOCIATES LLP

DeLaval Property
SUBSURFACE LOG
HOLE NUMBER B4

PROJECT NUMBER: 11205.1011.1102 August 16, 2004

LOCATION: Poughkeepsie, New York

CLIENT: City of Poughkeepsie

CONTRACTOR: Aquifer Drilling & Testing, Inc.

DRILLER: INSPECTOR: J. Herrick

START DATE and TIME: 8/16/2004 11:15:00 AM

FINISH DATE and TIME: 8/16/2004 2:30:00 PM

SURFACE ELEV: CHECKED BY: S. Smith

DRILL FLUID: None DRILLING METHOD: Hollow Stem Augers

WATER LEVEL OBSERVATIONS DURING DRILLING	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	2	0.8	12-13-15-10	28				**Clayey SILT**, Some f.c. Gravel, trace f.m.c. sand, trace concrete, trace topsoil, and organics, brown, moist **(FILL)**		No visual, olfactory, of photoionic evidence of contamination in boring.	
S2	2	0.8	28-37-14-6	51				**Clayey SILT**, Some f.c. Gravel, little concrete, brown, moist **(FILL)**			
S3	2	1.1	5-6-11-8	17		5		**Clayey SILT**, trace f.m.c. sand, trace f.c. gravel, trace brick, trace concrete, brown, moist **(FILL)**			
S4	2	0.4	12-50-NA-NA					**Clayey SILT**, trace sand, f.c. gravel, trace brick, trace concrete, trace aluminum, brown, moist **(FILL)**			
S5	2	0.2	4-5-5-4	10				**f. SAND and SILT**, Some Cobbles, trace clay, gray, moist **(FILL)**			
S6	2	1.2	2-1-1-12	2		10		**Silty CLAY**, gray, moist **(CL-ML)**			
S7	2	1.2	1-1-1-12	2				**Silty CLAY**, trace shale fragments, gray, moist **(CL-ML)**			
								End of Boring at 14 ft			
						15					
						20					

SUBSURFACE LOG 11205 LOGS.GPJ UPDATEDCHA.GDT 9/12/06

CLOUGH HARBOUR & ASSOCIATES LLP

PROJECT NUMBER: 11205.1011.1102 August 16, 2004

DeLaval Property
SUBSURFACE LOG
HOLE NUMBER B5

LOCATION: Poughkeepsie, New York

CLIENT: City of Poughkeepsie

CONTRACTOR: Aquifer Drilling & Testing, Inc.

DRILLER: INSPECTOR: J. Herrick

START DATE and TIME: 8/17/2004 3:45:00 PM

FINISH DATE and TIME: 8/17/2004 5:20:00 PM

SURFACE ELEV: CHECKED BY: S. Smith

DRILL FLUID: None DRILLING METHOD: Hollow Stem Augers

WATER LEVEL OBSERVATIONS DURING DRILLING	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	2	0.9	2-4-5-3	9				**f. SAND and SILT**, Some f. c. Gravel, little brick, brown, moist **(FILL)**			
								f. SAND and SILT, Some f.c. Gravel, gray, mottled, moist **(FILL)**			
S2	2	1.4	1-7-12-27	19				**f.c. GRAVEL**, and SILT, black, moist **(FILL)**		No visual, olfactory, of photoionic evidence of contamination in boring.	
								f.c. GRAVEL, Some Slag, little cobbles, trace silt, black, wet **(FILL)**			
S3	2	1.4	19-13-9-9	22		5					
								SLAG, little cobbles, trace silt, black, wet **(FILL)**		No PID reading, black stain, heavy petroleum odor	
S4	2	0.3	4-5-6-5	11							
S5	2	1.1	3-4-10-8	14							
						10					
S6	2	0.8	6-7-8-9	15							
								f. SAND and SILT, Some Cobbles, black, wet **(FILL)**			
S7	2	0.3	4-3-2-1	5							
S8	2	0.5	1-2-2-2	4		15					
S9	2	0.5	2-1-2-3	3							
S10	2	0.4	3-5-3-3	8							
						20		End of Boring at 20 ft		Slight petroleum odor, staining, no PID reading	

CLOUGH HARBOUR & ASSOCIATES LLP

PROJECT NUMBER: 11205.1011.1102 August 16, 2004

DeLaval Property
SUBSURFACE LOG
HOLE NUMBER B6

LOCATION: Poughkeepsie, New York

CLIENT: City of Poughkeepsie

CONTRACTOR: Aquifer Drilling & Testing, Inc.

DRILLER: INSPECTOR: J. Herrick

START DATE and TIME: 8/18/2004 8:00:00 AM

FINISH DATE and TIME: 8/18/2004 10:30:00 AM

SURFACE ELEV: CHECKED BY: S. Smith

DRILL FLUID: None

DRILLING METHOD: Hollow Stem Augers

WATER LEVEL OBSERVATIONS DURING DRILLING	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	2	1	4-9-11-24	20				**f. SAND and SILT**, Some f.c. Gravel, trace coal, trace cobbles, brown, moist **(FILL)**			
S2	2	1.4	3-5-13-23	18				**f. SAND and SILT**, Some f.c. Gravel, trace brick, trace cobbles, brown, moist **(FILL)**			
S3	2	0.7	6-40-53-21	93		5		**SILT**, little concrete, little brick, trace f. sand, brown, moist **(FILL)**			
S4	2	0.8	11-10-8-9	18				**f. SAND and SILT**, Some f.c. Gravel, little cobbles, brown, moist **(FILL)**		No visual, olfactory, of photoionic evidence of contamination	
S5	2	0.7	3-2-3-6	5				**f. SAND and SILT**, trace brick, brown, moist **(FILL)**		Slight solvent odor	
S6	2	0.7	2-2-3-4	5		10		**f.c. GRAVEL**, Some f.m. Sand, black, wet **(FILL)** **f.c. GRAVEL**, trace f. sand, trace cobbles, wet **(FILL)**			
S7	2	1	3-3-9-11	12				**SILT**, gray, saturated **(ML)** **SILT**, little shale fragments, gray, saturated **(ML)**			
S8	2	1.4	3-13-9-2	22		15		**SILT**, trace shale fragments, trace roots, gray, saturated **(ML)**			
								End of Boring at 16 ft		Petroleum odor, trace product, sheen on water	
						20					

SUBSURFACE LOG 11205 LOGS.GPJ UPDATEDCHA.GDT 9/12/06

CLOUGH HARBOUR & ASSOCIATES LLP

PROJECT NUMBER: 11205.1011.1102 August 16, 2004

DeLaval Property
SUBSURFACE LOG
HOLE NUMBER B7

LOCATION: Poughkeepsie, New York

CLIENT: City of Poughkeepsie

CONTRACTOR: Aquifer Drilling & Testing, Inc.

DRILLER: INSPECTOR: J. Herrick

START DATE and TIME: 8/18/2004 3:00:00 PM

FINISH DATE and TIME: 8/18/2004 4:50:00 PM

SURFACE ELEV: CHECKED BY: S. Smith

DRILL FLUID: None DRILLING METHOD: Hollow Stem Augers

WATER LEVEL OBSERVATIONS DURING DRILLING	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								SILT, trace f.c. gravel, trace m.c. sand, trace coal, trace ash, black, moist **(FILL)**			
S1	2	2	9-8-8-8	16				**f. SAND**, Some Fire Brick, brown, dry **(FILL)**			
								SILT, little f.c. gravel, trace m.c. sand, trace coal, trace ash, black, moist **(FILL)**			
								SILT, black, moist **(FILL)**			
S2	2	1.3	6-4-9-7	13				**f. SAND**, yellow/brown, dry **(FILL)**			
								SILT, black, moist **(FILL)**			
								SILT, trace cobbles, trace concrete, trace metal filings, black moist **(FILL)**		No visual, olfactory, of photoionic evidence of contamination	
S3	2	0.9	3-3-4-4	7		5					
								SILT, trace slag, black, moist **(FILL)**		Slight petroleum odor	
S4	2	1.1	4-2-1-2	3				**f. SAND**, brown, dry **(FILL)**			
								SILT, trace slag, black, moist **(FILL)**			
								f. SAND and SILT, trace stone, black, moist **(FILL)**			
S5	2	1	2-2-1-2	3				**f. SAND**, yellow, dry **(FILL)**			
								f. SAND and SILT, trace stone, black, moist **(FILL)**			
						10		**f. SAND and SILT**, trace stone, black, moist **(FILL)**			
S6	2	1.1	4-3-4-4	7				**f. SAND**, yellow, dry **(FILL)**			
								f. SAND and SILT, trace stone, black, moist **(SM)**			
								f. SAND and SILT, black, moist **(SM)**		No visual, olfactory, of photoionic evidence of contamination	
S7	2	1.5	4-6-5-3	11							
								f. SAND and SILT, trace stone, black, saturated **(SM)**		Slight petroleum odor	
S8	2	1	2-3-3-4	6		15					
S9	1	0.5	48-1-50/0.5	R				**SHALE (BEDROCK)**			
								End of Boring at 17 ft		Heavy petroleum odor, black stained and soaked on top of bedrock	
						20					

SUBSURFACE LOG 11205 LOGS.GPJ UPDATEDCHA.GDT 9/12/06

CLOUGH HARBOUR & ASSOCIATES LLP

DeLaval Property
SUBSURFACE LOG
HOLE NUMBER B8

PROJECT NUMBER: 11205.1011.1102 August 16, 2004

LOCATION: Poughkeepsie, New York

CLIENT: City of Poughkeepsie

CONTRACTOR: Aquifer Drilling & Testing, Inc.

DRILLER: INSPECTOR: J. Herrick

START DATE and TIME: 8/18/2004 1:45:00 PM

FINISH DATE and TIME: 8/18/2004 2:30:00 PM

SURFACE ELEV: CHECKED BY: S. Smith

DRILL FLUID: None DRILLING METHOD: Hollow Stem Augers

WATER LEVEL OBSERVATIONS DURING DRILLING	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	2	1.5	3-4-2-3	6				**SILT**, Some f.m. Sand, trace f.c. gravel, trace brick, brown, moist **(FILL)**		No visual, olfactory, of photoionic evidence of contamination in boring.	
								COAL, Some Ash, black, dry **(FILL)**			
S2	2	1.5	3-5-11-11	16				**f. SAND and SILT**, Some Brick, little slag, trace coal, trace ash, black/brown, moist **(FILL)**			
S3	2	1	6-7-6-5	13		5		**SILT**, trace f. sand, trace f. gravel, trace slag, trace coal, trace ash, brown, moist **(FILL)**			
S4	2	0	6-2-2-11	4				**SILT**, brown, moist **(FILL)**			
S5	2	0.2	11-8-7-12	15		10		**SILT**, and SLAG, brown, saturated **(FILL)**			
S6	2	1.4	8-14-49-44	63				**m.c. SAND**, and f.c. GRAVEL, Some Brick, brown, saturated **(FILL)**			
								SHALE, gray, moist **(SHALE)**			
						15		End of Boring at 12 ft		Borehole grouted to surface after completing boring.	
						20					

SUBSURFACE LOG 11205 LOGS.GPJ UPDATEDCHA.GDT 9/12/06

Summary of Analytical Results

Summary of Analytical Results for Surficial Soils
DeLaval Property Supplemental Investigation, July 2004

Contaminant of Concern	Standard, Criteria and Guidance Value	Concentration Range Detected[1]	Frequency of Samples Exceeding SCGs
SVOCs (units in micrograms per kilogram (µg/kg))			
Acenaphthylene	41,000	140-8,000	0 of 30
Acenaphthene	50,000	120-430	0 of 30
Anthracene	50,000	74-18,000	0 of 30
Benzo(a)anthracene	224	85-150,000	23 of 30
Benzo(a)pyrene	61	160-100,000	24 of 30
Benzo(b)fluoranthene	1,100	85-180,000	18 of 30
Benzo(g,h,i)perylene	50,000	110-25,000	0 of 30
Benzo(k)fluoranthene	1,100	150-64,000	10 of 30
Bis(2-Ethylhexyl)phthalate	50,000	220-6,100	0 of 30
Carbazole		79-490	Detected in 7 of 30
Chrysene	400	81-130,000	21 of 30
Dibenz(a,h)anthracene	14	100-120	2 of 30
Dibenzofuran	6,200	110-230	0 of 30
Fluoranthene	50,000	140-320,000	2 of 30
Fluorene	50,000	80-280	0 of 30
Indeno(1,2,3-cd)pyrene	3,200	88-16,000	2 of 30
2-Methylnapthalene	36,400	160-310	0 of 30
Naphthalene	13,000	250-420	0 of 30
Phenanthrene	50,000	130-92,000	1 of 30
Pyrene	50,000	130-260,000	2 of 30
PCBs (units in micrograms per kilogram (µg/kg))			
Aroclor-1260	1,000	50-3600	3 of 30
METALS (units in milligrams per liter (mg/L))			
Arsenic	7.5	4.89-24.8	20 of 30
Barium	300	15.1-374	2 of 30
Cadmium	1 or SB (1.93)	0.973-8.7	25 of 30
Chromium	10 or SB (15.8)	5.94-627	17 of 30
Lead	500	22.8-908	22 of 30
Selenium	2	0.602-3.20	6 of 30
Silver	SB (0.117)	0.149-240	12 of 30
Mercury	0.1	0.02-1.30	21 of 30

Note: 1. If a single value is noted, the referenced parameter was detected either only one time, or multiple times at the same concentration.

Summary of Analytical Results for Subsurface Soils
Supplemental Investigation of the DeLaval Property, July & August 2004

Contaminant of Concern	Standard, Criteria and Guidance Value	Concentration Range Detected[1]	Frequency of Samples Exceeding SCGs
VOCs (units in micrograms per kilogram (µg/kg))			
Acetone	200	34-3,500	4 of 22
Benzene	60	43-2,300	2 of 22
Carbon Disulfide	2,700	1.6-56	0 of 22
Chlorobenzene	1,700	13,000	1 of 22
Ethylbenzene	5,500	3.5-530	0 of 22
Methylene Chloride	100	2.6-67	0 of 22
Toluene	1,500	2.8-320	0 of 22
Tetrachloroethene	1,400	4.1-110	0 of 22
m/p-Xylene (Total)	1,200	1.1-4,900	2 of 22
o-Xylene	1,200	0.47-1300	1 of 22
SVOCs (units in micrograms per kilogram (µg/kg))			
Acenaphthylene	41,000	210-850	0 of 21
Acenaphthene	50,000	140-1500	0 of 21
Anthracene	50,000	62-3,300	0 of 21
Benzo(a)anthracene	224	130-11,000	13 of 21
Benzo(a)pyrene	61	96-14,000	11 of 21
Benzo(b)fluoranthene	1,100	77-19,000	5 of 21
Benzo(g,h,i)perylene	50,000	48-3,200	0 of 21
Benzo(k)fluoranthene	1,100	65-7,100	4 of 21
Bis(2-Ethylhexyl)phthalate	50,000	44-280	0 of 21
Carbazole		100-550	Detected in 4 of 21
Chrysene	400	120-13,000	10 of 21
Dibenz(a,h)anthracene	14	95-420	3 of 21
Dibenzofuran	6,200	59-160	of 21
Fluoranthene	50,000	250-18,000	of 21
Fluorene	50,000	49-1,800	of 21
Indeno(1,2,3-cd)pyrene	3,200	56-2,200	0 of 21
2-Methylnapthalene	36,400	54-7,500	of 21
Naphthalene	13,000	91-490	0 of 21
Phenanthrene	50,000	180-10	0 of 21
Pyrene	50,000	61-18,000	0 of 21
PCBs (units in micrograms per kilogram (µg/kg))			
Aroclor-1254	10,000	97-11,000	1 of 21
Aroclor-1260	10,000	60-340	0 of 21
METALS (units in milligrams per liter (mg/L))			
Arsenic	7.5	0.306-35.5	12 of 21
Barium	300	10.1-1,900	4 of 21
Cadmium	1 or SB (1.93)	0.307-21.7	11 of 21

Contaminant of Concern	Standard, Criteria and Guidance Value	Concentration Range Detected[1]	Frequency of Samples Exceeding SCGs
Chromium	10 or SB (15.8)	4.17-1,730	13 of 21
Lead	500	16.4-17,200	12 of 21
Selenium	2	0.564-9.18	7 of 21
Silver	SB (0.11)	0.206-1.13	7 of 21
Mercury	0.1	0.01-1.4	7 of 21

Note: 1. If a single value is noted, the referenced parameter was detected either only one time, or multiple times at the same concentration.

Summary of Analytical Results for Groundwater
Supplemental Investigation of the DeLaval Property, August & October 2004

Contaminant of Concern	Standard, Criteria and Guidance Value	Concentration Range Detected[1]	Frequency of Samples Exceeding SCGs
VOCs (units in micrograms per kilogram (µg/kg))			
cis-1,2-Dichloroethene	5	0.77 - 49	1 of 8
Trichloroethene	5	0.67 - 5.0	1 of 8
SVOCs (units in micrograms per kilogram (µg/kg))			
Acenaphthene	20[2]	2.6	0 of 8
Bis(2-Ethylhexyl)phthalate	5	1.2-1.8	0 of 8
Di-n-butylphthalate	50[2]	3.9	0 of 8
Fluorene	50[2]	2.2	0 of 8
Naphthalene	10	1.5	0 of 8
Phenanthrene	50[2]	1.1	0 of 8
PCBs (units in micrograms per kilogram (µg/kg))			
Aroclor-1260	0.09	0.31 - 4.7	2 of 9
METALS (units in milligrams per liter (mg/L))			
Barium	1,000	16.1-204	0 of 8
Chromium	50	1.8-3.1	0 of 8
Lead	25	21-39.2	1 of 8
Mercury	0.7	0.03-0.08	0 of 8

Note: 1. If a single value is noted, the referenced parameter was detected either only one time, or multiple times at the same concentration.

2. Indicates value is a guidance value rather than a standard.

Analytical Summary Tables

Table 1. Surficial Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

Semivolatile Organics								
Sample ID		SS-1	SS-1DL	SS-2	SS-3	SS-3DL	SS-4	SS-5
Laboratory Sample No.		S3753-01	S3753-01DL	S3753-02	S3753-03	S3753-03DL	S3753-04	S3753-05
Sampling Date		07/22/04	07/22/04	07/22/04	07/22/04	07/22/04	07/22/04	07/22/04
Dilution Factor		1.0	5.0	1.0	1.0	5.0	1.0	1.0
Units	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
COMPOUND								
bis(2-Chloroethyl)ether		38 U	190 UD	36 U	35 U	180 UD	37 U	230 U
1,2-Dichlorobenzene	7,900	42 U	210 UD	40 U	39 U	200 UD	40 U	250 U
1,3-Dichlorobenzene	1,600	29 U	140 UD	27 U	27 U	130 UD	27 U	170 U
1,4-Dichlorobenzene	8,500	32 U	160 UD	31 U	30 U	150 UD	31 U	200 U
2,2-oxybis(1-Chloropropane)		42 U	210 UD	40 U	39 U	190 UD	40 U	250 U
N-Nitroso-di-n-propylamine		34 U	170 UD	32 U	32 U	160 UD	33 U	210 U
Hexachloroethane		37 U	190 UD	35 U	34 U	170 UD	36 U	220 U
Nitrobenzene	200	39 U	200 UD	37 U	37 U	180 UD	38 U	240 U
Isophorone	4,400	29 U	140 UD	27 U	27 U	130 UD	28 U	170 U
bis(2-Chloroethoxy)methane		35 U	180 UD	34 U	33 U	160 UD	34 U	210 U
1,2,4-Trichlorobenzene	3,400	22 U	110 UD	21 U	21 U	100 UD	21 U	130 U
Naphthalene	13,000	280 J	420 JD	16 U	16 U	78 UD	16 U	100 U
4-Chloroaniline	220 or MDL	290 U	1400 UD	270 U	270 U	1300 UD	280 U	1700 U
Hexachlorobutadiene		27 U	140 UD	26 U	25 U	130 UD	26 U	160 U
2-Methylnaphthalene	36,400	160 J	67 UD	13 U	12 U	62 UD	13 U	81 U
Hexachlorocyclopentadiene		19 U	97 UD	18 U	18 U	90 UD	19 U	120 U
2-Chloronaphthalene		16 U	81 UD	15 U	15 U	75 UD	16 U	98 U
2-Nitroaniline	430 or MDL	28 U	140 UD	27 U	26 U	130 UD	27 U	170 U
Dimethylphthalate	2,000	19 U	93 UD	18 U	17 U	86 UD	18 U	110 U
Acenaphthylene	41,000	140 J	120 UD	22 U	22 U	110 UD	22 U	140 U
2,6-Dinitrotoluene	1,000	33 U	170 UD	31 U	31 U	150 UD	32 U	200 U
3-Nitroaniline	500 or MDL	130 U	630 UD	120 U	120 U	580 UD	120 U	760 U
Acenaphthene	50,000**	430 J	530 JD	120 J	16 U	79 UD	16 U	100 U
Dibenzofuran	6,200	230 J	130 UD	24 U	24 U	120 UD	24 U	150 U
2,4-Dinitrotoluene		15 U	77 UD	15 U	14 U	72 UD	15 U	93 U
Diethylphthalate	71,000	24 U	120 UD	23 U	23 U	110 UD	23 U	150 U
4-Chlorophenyl-phenylether		19 U	96 UD	18 U	18 U	89 UD	18 U	120 U
Fluorene	50,000**	280 J	110 UD	80 J	20 U	100 UD	21 U	130 U
4-Nitroaniline		61 U	300 UD	58 U	56 U	280 UD	58 U	370 U
N-Nitrosodiphenylamine		20 U	98 UD	19 U	18 U	91 UD	19 U	120 U
4-Bromophenyl-phenylether		20 U	100 UD	19 U	19 U	95 UD	20 U	120 U
Hexachlorobenzene	410	15 U	73 UD	14 U	13 U	67 UD	14 U	88 U
Phenanthrene	50,000**	6300 EJ	4500 D	970	330 J	80 UD	290 J	1100 J
Anthracene	50,000**	830	1100 JD	230 J	74 J	86 UD	18 U	110 U
Carbazole		380 J	490 JD	79 J	16 U	79 UD	16 U	100 U
Di-n-butylphthalate	8,100	10 U	52 UD	9.8 U	9.6 U	48 UD	9.9 U	62 U
Fluoranthene	50,000**	8500 EJ	6800 D	1600	630 J	540 JD	540 J	3000 J
Pyrene	50,000**	7700 EJ	6600 D	1500	530 J	490 JD	560 J	2500 J
Butylbenzylphthalate	50,000**	26 U	130 UD	25 U	24 U	120 UD	25 U	160 U
3,3-Dichlorobenzidine		120 U	620 UD	120 U	120 U	580 UD	120 U	750 U
Benzo(a)anthracene	224 or MDL	3300	3200 JD	900	320 J	54 UD	320 J	1600 J
Chrysene	400	2800	2400 JD	790	300 J	110 UD	350 J	1600 J
bis(2-Ethylhexyl)phthalate	50,000**	18 U	89 UD	17 U	6100 EJ	4900 D	220 J	110 U
Di-n-octyl phthalate	50,000**	19 U	93 UD	18 U	17 U	86 UD	18 U	110 U
Benzo(b)fluoranthene	1,100	4600 J	3600 JD	1600 J	450 J	190 UD	510 J	2000 J
Benzo(k)fluoranthene	1,100	2300	1900 JD	720 J	290 J	120 UD	360 J	840 J
Benzo(a)pyrene	61 or MDL	3000	2600 JD	940	260 J	62 UD	310 J	1300 J
Indeno(1,2,3-cd)pyrene	3,200	420 J	500 JD	180 J	96 J	87 UD	88 J	800 J
Dibenz(a,h)anthracene	14 or MDL	100 J	110 UD	22 U	21 U	110 UD	22 U	140 U
Benzo(g,h,i)perylene	50,000**	940	920 JD	370 J	110 J	160 UD	160 J	770 J
Total Confident Conc. SVOC		42,690	35,560	10,079	9,490	5,930	3,708	15,510
Total TICs		23,830	0	25,350	17,870	0	7,690	53,900

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm , and individual Semi-VOCs<50ppm

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 1. Surficial Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

Semivolatile Organics								
Sample ID		SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12
Laboratory Sample No.		S3753-06	S3753-07	S3753-08	S3753-09	S3753-10	S3753-11	S3753-12
Sampling Date		07/22/04	07/22/04	07/22/04	07/22/04	07/22/04	07/22/04	07/22/04
Dilution Factor		1.0	5.0	1.0	1.0	5.0	1.0	1.0
Units	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
COMPOUND								
bis(2-Chloroethyl)ether		200 U	220 U	38 U	190 U	200 U	39 U	180 U
1,2-Dichlorobenzene	7,900	220 U	240 U	42 U	210 U	220 U	43 U	200 U
1,3-Dichlorobenzene	1,600	150 U	160 U	28 U	140 U	150 U	29 U	140 U
1,4-Dichlorobenzene	8,500	170 U	190 U	32 U	160 U	170 U	33 U	150 U
2,2-oxybis(1-Chloropropane)		220 U	240 U	42 U	200 U	220 U	43 U	200 U
N-Nitroso-di-n-propylamine		180 U	200 U	34 U	170 U	180 U	35 U	160 U
Hexachloroethane		200 U	210 U	37 U	180 U	190 U	38 U	170 U
Nitrobenzene	200	210 U	230 U	39 U	190 U	200 U	40 U	190 U
Isophorone	4,400	150 U	170 U	29 U	140 U	150 U	29 U	140 U
bis(2-Chloroethoxy)methane		190 U	200 U	35 U	170 U	180 U	36 U	170 U
1,2,4-Trichlorobenzene	3,400	120 U	130 U	22 U	110 U	110 U	23 U	110 U
Naphthalene	13,000	89 U	97 U	17 U	82 U	87 U	17 U	80 U
4-Chloroaniline	220 or MDL	1500 U	1600 U	290 U	1400 U	1500 U	290 U	1400 U
Hexachlorobutadiene		140 U	160 U	27 U	130 U	140 U	28 U	130 U
2-Methylnaphthalene	36,400	71 U	77 U	13 U	65 U	69 U	14 U	63 U
Hexachlorocyclopentadiene		100 U	110 U	19 U	95 U	100 U	20 U	92 U
2-Chloronaphthalene		86 U	93 U	16 U	79 U	83 U	16 U	76 U
2-Nitroaniline	430 or MDL	150 U	160 U	28 U	140 U	140 U	29 U	130 U
Dimethylphthalate	2,000	98 U	110 U	18 U	90 U	95 U	19 U	87 U
Acenaphthylene	41,000	120 U	130 U	23 U	110 U	1700 J	24 U	110 U
2,6-Dinitrotoluene	1,000	170 U	190 U	33 U	160 U	170 U	34 U	160 U
3-Nitroaniline	500 or MDL	660 U	720 U	120 U	610 U	650 U	130 U	590 U
Acenaphthene	50,000**	91 U	98 U	17 U	83 U	88 U	17 U	81 U
Dibenzofuran	6,200	140 U	150 U	25 U	120 U	130 U	26 U	120 U
2,4-Dinitrotoluene		82 U	89 U	15 U	75 U	80 U	16 U	73 U
Diethylphthalate	71,000	130 U	140 U	24 U	120 U	130 U	25 U	120 U
4-Chlorophenyl-phenylether		100 U	110 U	19 U	94 U	99 U	20 U	91 U
Fluorene	50,000**	120 U	130 U	22 U	110 U	110 U	22 U	100 U
4-Nitroaniline		320 U	350 U	60 U	300 U	310 U	62 U	290 U
N-Nitrosodiphenylamine		100 U	110 U	20 U	96 U	100 U	20 U	93 U
4-Bromophenyl-phenylether		110 U	120 U	20 U	99 U	110 U	21 U	96 U
Hexachlorobenzene	410	77 U	83 U	14 U	71 U	75 U	15 U	69 U
Phenanthrene	50,000**	1500 J	3100 J	130 J	980 J	6500	18 U	2200 J
Anthracene	50,000**	470 J	810 J	18 U	90 U	1600 J	19 U	580 J
Carbazole		91 U	98 U	17 U	83 U	460 J	17 U	81 U
Di-n-butylphthalate	8,100	55 U	59 U	10 U	50 U	53 U	10 U	49 U
Fluoranthene	50,000**	3300 J	5700	300 J	2200 J	24000	140 J	2800 J
Pyrene	50,000**	2600 J	5100	270 J	1800 J	15000	130 J	2500 J
Butylbenzylphthalate	50,000**	140 U	150 U	26 U	130 U	130 U	26 U	120 U
3,3-Dichlorobenzidine		660 U	710 U	120 U	610 U	640 U	130 U	590 U
Benzo(a)anthracene	224 or MDL	1800 J	3400 J	200 J	1200 J	10000	85 J	1400 J
Chrysene	400	1500 J	2400 J	200 J	1200 J	7200	81 J	1200 J
bis(2-Ethylhexyl)phthalate	50,000**	94 U	100 U	18 U	87 U	92 U	18 U	84 U
Di-n-octyl phthalate	50,000**	98 U	110 U	18 U	90 U	95 U	19 U	87 U
Benzo(b)fluoranthene	1,100	1700 J	3800 J	200 J	1500 J	11000 J	85 J	1300 J
Benzo(k)fluoranthene	1,100	1000 J	1400 J	150 J	640 J	7500	27 U	500 J
Benzo(a)pyrene	61 or MDL	1300 J	2300 J	160 J	720 J	6900	14 U	900 J
Indeno(1,2,3-cd)pyrene	3,200	460 J	490 J	19 U	410 J	1100 J	19 U	380 J
Dibenz(a,h)anthracene	14 or MDL	120 U	130 U	23 U	110 U	120 U	23 U	110 U
Benzo(g,h,i)perylene	50,000**	490 J	680 J	34 U	420 J	1800 J	34 U	370 J
Total Confident Conc. SVOC		16,120	29,180	1,610	11,070	94,760	521	14,130
Total TICs		3,100	6,510	7,290	4,080	19,100	6,680	6,680

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 1. Surficial Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

Semivolatile Organics								
Sample ID		SS-13	SS-14	SS-14B	SS-14BDL	SS-15	SS-16	SS-17
Laboratory Sample No.		S3753-13	S3753-14	S3753-15	S3753-15DL	S3753-16	S3753-17	S3753-18
Sampling Date		07/22/04	07/22/04	07/22/04	07/22/04	07/22/04	07/22/04	07/22/04
Dilution Factor		5.0	1.0	1.0	5.0	1.0	1.0	5.0
Units	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
COMPOUND								
bis(2-Chloroethyl)ether		920 U	34 U	35 U	170 UD	39 U	170 U	200 U
1,2-Dichlorobenzene	7,900	1000 U	38 U	39 U	190 UD	43 U	190 U	220 U
1,3-Dichlorobenzene	1,600	690 U	26 U	26 U	130 UD	29 U	130 U	150 U
1,4-Dichlorobenzene	8,500	780 U	29 U	30 U	150 UD	33 U	150 U	170 U
2,2-oxybis(1-Chloropropane)		1000 U	38 U	38 U	190 UD	43 U	190 U	220 U
N-Nitroso-di-n-propylamine		830 U	31 U	31 U	160 UD	35 U	160 U	180 U
Hexachloroethane		890 U	33 U	34 U	170 UD	38 U	170 U	190 U
Nitrobenzene	200	950 U	35 U	36 U	180 UD	41 U	180 U	200 U
Isophorone	4,400	700 U	26 U	26 U	130 UD	30 U	130 U	150 U
bis(2-Chloroethoxy)methane		850 U	32 U	32 U	160 UD	36 U	160 U	180 U
1,2,4-Trichlorobenzene	3,400	540 U	20 U	20 U	100 UD	23 U	100 U	110 U
Naphthalene	13,000	410 U	15 U	15 U	77 UD	17 U	77 U	87 U
4-Chloroaniline	220 or MDL	6900 U	260 U	260 U	1300 UD	300 U	1300 U	1500 U
Hexachlorobutadiene		660 U	24 U	25 U	120 UD	28 U	120 U	140 U
2-Methylnaphthalene	36,400	320 U	12 U	12 U	61 UD	14 U	61 U	69 U
Hexachlorocyclopentadiene		470 U	17 U	18 U	89 UD	20 U	89 U	100 U
2-Chloronaphthalene		390 U	14 U	15 U	74 UD	17 U	74 U	83 U
2-Nitroaniline	430 or MDL	680 U	25 U	26 U	130 UD	29 U	130 U	150 U
Dimethylphthalate	2,000	450 U	17 U	17 U	85 UD	19 U	84 U	96 U
Acenaphthylene	41,000	6600 J	370 J	540 J	420 JD	24 U	110 U	1100 J
2,6-Dinitrotoluene	1,000	800 U	30 U	30 U	150 UD	34 U	150 U	170 U
3-Nitroaniline	500 or MDL	3000 U	110 U	110 U	570 UD	130 U	570 U	650 U
Acenaphthene	50,000**	410 U	15 U	16 U	78 UD	18 U	78 U	88 U
Dibenzofuran	6,200	620 U	23 U	23 U	120 UD	26 U	120 U	130 U
2,4-Dinitrotoluene		370 U	14 U	14 U	71 UD	16 U	71 U	80 U
Diethylphthalate	71,000	590 U	22 U	22 U	110 UD	25 U	110 U	130 U
4-Chlorophenyl-phenylether		460 U	17 U	18 U	88 UD	20 U	88 U	99 U
Fluorene	50,000**	530 U	20 U	20 U	100 UD	23 U	100 U	110 U
4-Nitroaniline		1500 U	54 U	56 U	280 UD	63 U	280 U	310 U
N-Nitrosodiphenylamine		480 U	18 U	18 U	90 UD	20 U	90 U	100 U
4-Bromophenyl-phenylether		490 U	18 U	19 U	93 UD	21 U	93 U	110 U
Hexachlorobenzene	410	350 U	13 U	13 U	66 UD	15 U	66 U	75 U
Phenanthrene	50,000**	22000	1200	1800	1300 JD	290 J	3100 J	6900 J
Anthracene	50,000**	5500 J	270 J	370 J	360 JD	120 J	790 J	1300 J
Carbazole		410 U	86 J	110 J	78 UD	18 U	78 U	450 J
Di-n-butylphthalate	8,100	250 U	9.2 U	9.4 U	47 UD	11 U	47 U	53 U
Fluoranthene	50,000**	88000	4600	6500 EJ	4600 D	910	8000	19000
Pyrene	50,000**	54000	2900	4000	3200 JD	910	5800	11000
Butylbenzylphthalate	50,000**	630 U	23 U	24 U	120 UD	27 U	120 U	130 U
3,3-Dichlorobenzidine		3000 U	110 U	110 U	570 UD	130 U	570 U	640 U
Benzo(a)anthracene	224 or MDL	42000	2200	3100	2500 JD	680 J	3800	8100
Chrysene	400	31000	1500	2200	2000 JD	570 J	3200 J	6000
bis(2-Ethylhexyl)phthalate	50,000**	430 U	16 U	16 U	81 UD	18 U	81 U	92 U
Di-n-octyl phthalate	50,000**	450 U	17 U	17 U	85 UD	19 U	84 U	96 U
Benzo(b)fluoranthene	1,100	49000 J	2900 J	5300 J	2900 JD	900 J	5100 J	10000
Benzo(k)fluoranthene	1,100	25000	1300	2100	1200 JD	430 J	1900 J	3600 J
Benzo(a)pyrene	61 or MDL	26000	1400	2100	1600 JD	610 J	3100 J	5200
Indeno(1,2,3-cd)pyrene	3,200	5200 J	340 J	370 J	610 JD	120 J	810 J	1400 J
Dibenz(a,h)anthracene	14 or MDL	550 U	20 U	120 J	100 UD	23 U	100 U	120 U
Benzo(g,h,i)perylene	50,000**	7700 J	450 J	540 J	610 JD	170 J	1100 J	1600 J
Total Confident Conc. SVOC		362,000	19,516	29,150	21,300	5,710	36,700	75,650
Total TICs		29,600	4,080	10,530	0	6,100	5,870	8,300

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 1. Surficial Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

Semivolatile Organics								
Sample ID		SS-18	SS-19	SS-20	SS-21	SS-22	SS-23	SS-24
Laboratory Sample No.		S3753-19	S3754-10	S3754-01	S3754-02	S3754-03	S3754-04	S3754-05
Sampling Date		07/22/04	07/22/04	07/22/04	07/22/04	07/22/04	07/22/04	07/22/04
Dilution Factor		5.0	1.0	1.0	10.0	1.0	1.0	1.0
Units	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
COMPOUND								
bis(2-Chloroethyl)ether		190 U	190 U	190 U	1800 U	190 U	210 U	180 U
1,2-Dichlorobenzene	7,900	210 U	210 U	210 U	2000 U	210 U	230 U	200 U
1,3-Dichlorobenzene	1,600	140 U	140 U	140 U	1400 U	140 U	150 U	140 U
1,4-Dichlorobenzene	8,500	160 U	160 U	160 U	1500 U	160 U	170 U	160 U
2,2-oxybis(1-Chloropropane)		210 U	210 U	200 U	2000 U	210 U	230 U	200 U
N-Nitroso-di-n-propylamine		170 U	170 U	170 U	1600 U	170 U	180 U	170 U
Hexachloroethane		180 U	190 U	180 U	1800 U	180 U	200 U	180 U
Nitrobenzene	200	200 U	200 U	190 U	1900 U	200 U	210 U	190 U
Isophorone	4,400	140 U	140 U	140 U	1400 U	140 U	160 U	140 U
bis(2-Chloroethoxy)methane		180 U	180 U	170 U	1700 U	180 U	190 U	170 U
1,2,4-Trichlorobenzene	3,400	110 U	110 U	110 U	1100 U	110 U	120 U	110 U
Naphthalene	13,000	84 U	85 U	82 U	810 U	84 U	91 U	82 U
4-Chloroaniline	220 or MDL	1400 U	1400 U	1400 U	14000 U	1400 U	1500 U	1400 U
Hexachlorobutadiene		130 U	140 U	130 U	1300 U	140 U	150 U	130 U
2-Methylnaphthalene	36,400	66 U	67 U	65 U	640 U	67 U	72 U	65 U
Hexachlorocyclopentadiene		96 U	98 U	95 U	930 U	97 U	100 U	94 U
2-Chloronaphthalene		80 U	81 U	79 U	770 U	81 U	87 U	78 U
2-Nitroaniline	430 or MDL	140 U	140 U	140 U	1300 U	140 U	150 U	140 U
Dimethylphthalate	2,000	92 U	93 U	90 U	880 U	92 U	100 U	90 U
Acenaphthylene	41,000	120 U	120 U	110 U	1100 U	120 U	130 U	110 U
2,6-Dinitrotoluene	1,000	160 U	170 U	160 U	1600 U	160 U	180 U	160 U
3-Nitroaniline	500 or MDL	620 U	630 U	610 U	6000 U	620 U	680 U	610 U
Acenaphthene	50,000**	85 U	86 U	83 U	820 U	85 U	92 U	83 U
Dibenzofuran	6,200	130 U	130 U	120 U	1200 U	130 U	140 U	120 U
2,4-Dinitrotoluene		77 U	78 U	75 U	740 U	77 U	83 U	75 U
Diethylphthalate	71,000	120 U	120 U	120 U	1200 U	120 U	130 U	120 U
4-Chlorophenyl-phenylether		95 U	97 U	94 U	920 U	96 U	100 U	93 U
Fluorene	50,000**	110 U	110 U	110 U	1100 U	110 U	120 U	110 U
4-Nitroaniline		300 U	310 U	300 U	2900 U	300 U	330 U	290 U
N-Nitrosodiphenylamine		98 U	99 U	96 U	940 U	98 U	110 U	95 U
4-Bromophenyl-phenylether		100 U	100 U	99 U	970 U	100 U	110 U	99 U
Hexachlorobenzene	410	72 U	73 U	71 U	690 U	72 U	78 U	70 U
Phenanthrene	50,000**	630 J	610 J	500 J	830 U	820 J	94 U	420 J
Anthracene	50,000**	92 U	93 U	90 U	880 U	92 U	100 U	90 U
Carbazole		85 U	86 U	83 U	820 U	85 U	92 U	83 U
Di-n-butylphthalate	8,100	51 U	52 U	50 U	490 U	51 U	56 U	50 U
Fluoranthene	50,000**	1500 J	1500 J	1100 J	3900 J	1300 J	660 J	630 J
Pyrene	50,000**	1300 J	1400 J	1100 J	3800 J	1300 J	700 J	670 J
Butylbenzylphthalate	50,000**	130 U	130 U	130 U	1200 U	130 U	140 U	130 U
3,3-Dichlorobenzidine		620 U	630 U	610 U	5900 U	620 U	670 U	600 U
Benzo(a)anthracene	224 or MDL	950 J	740 J	640 J	560 U	630 J	63 U	57 U
Chrysene	400	840 J	900 J	630 J	1200 U	670 J	130 U	120 U
bis(2-Ethylhexyl)phthalate	50,000**	88 U	90 U	87 U	850 U	89 U	96 U	86 U
Di-n-octyl phthalate	50,000**	92 U	93 U	90 U	880 U	92 U	100 U	90 U
Benzo(b)fluoranthene	1,100	1200 J	770 J	700 J	3800 J	670 J	220 U	200 U
Benzo(k)fluoranthene	1,100	540 J	540 J	500 J	1300 U	130 U	140 U	130 U
Benzo(a)pyrene	61 or MDL	800 J	720 J	600 J	640 U	510 J	72 U	65 U
Indeno(1,2,3-cd)pyrene	3,200	93 U	540 J	91 U	900 U	93 U	100 U	91 U
Dibenz(a,h)anthracene	14 or MDL	110 U	110 U	110 U	1100 U	110 U	120 U	110 U
Benzo(g,h,i)perylene	50,000**	170 U	510 J	160 U	1600 U	170 U	180 U	160 U
Total Confident Conc. SVOC		7,760	8,230	5,770	11,500	5,900	1,360	1,720
Total TICs		3,890	5,720	12,830	0	2,570	7,000	20,900

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 1. Surficial Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

Semivolatile Organics						
Sample ID		SS-25	SS-26	SS-27	SS-28	SS-29
Laboratory Sample No.		S3754-06	S3753-20	S3754-07	S3754-08	S3754-09
Sampling Date		07/22/04	07/22/04	07/22/04	07/22/04	07/22/04
Dilution Factor		1.0	1.0	10.0	10.0	2.0
Units	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
COMPOUND						
bis(2-Chloroethyl)ether		170 U	40 U	2100 U	1800 U	360 U
1,2-Dichlorobenzene	7,900	180 U	44 U	2300 U	2000 U	400 U
1,3-Dichlorobenzene	1,600	120 U	30 U	1500 U	1300 U	270 U
1,4-Dichlorobenzene	8,500	140 U	34 U	1700 U	1500 U	310 U
2,2-oxybis(1-Chloropropane)		180 U	44 U	2300 U	1900 U	400 U
N-Nitroso-di-n-propylamine		150 U	36 U	1800 U	1600 U	320 U
Hexachloroethane		160 U	39 U	2000 U	1700 U	350 U
Nitrobenzene	200	170 U	41 U	2100 U	1800 U	370 U
Isophorone	4,400	130 U	30 U	1500 U	1300 U	270 U
bis(2-Chloroethoxy)methane		150 U	37 U	1900 U	1600 U	340 U
1,2,4-Trichlorobenzene	3,400	97 U	23 U	1200 U	1000 U	210 U
Naphthalene	13,000	74 U	250 J	910 U	780 U	160 U
4-Chloroaniline	220 or MDL	1300 U	300 U	15000 U	13000 U	2700 U
Hexachlorobutadiene		120 U	29 U	1500 U	1300 U	260 U
2-Methylnaphthalene	36,400	58 U	310 J	720 U	620 U	130 U
Hexachlorocyclopentadiene		85 U	20 U	1000 U	900 U	180 U
2-Chloronaphthalene		71 U	17 U	870 U	750 U	150 U
2-Nitroaniline	430 or MDL	120 U	30 U	1500 U	1300 U	270 U
Dimethylphthalate	2,000	81 U	19 U	990 U	860 U	180 U
Acenaphthylene	41,000	100 U	130 J	8000 J	1100 U	220 U
2,6-Dinitrotoluene	1,000	140 U	35 U	1800 U	1500 U	310 U
3-Nitroaniline	500 or MDL	550 U	130 U	6700 U	5800 U	1200 U
Acenaphthene	50,000**	75 U	18 U	920 U	790 U	160 U
Dibenzofuran	6,200	110 U	110 J	1400 U	1200 U	240 U
2,4-Dinitrotoluene		67 U	16 U	830 U	720 U	150 U
Diethylphthalate	71,000	110 U	26 U	1300 U	1100 U	230 U
4-Chlorophenyl-phenylether		84 U	20 U	1000 U	890 U	180 U
Fluorene	50,000**	96 U	23 U	1200 U	1000 U	210 U
4-Nitroaniline		260 U	64 U	3300 U	2800 U	580 U
N-Nitrosodiphenylamine		86 U	21 U	1100 U	910 U	190 U
4-Bromophenyl-phenylether		89 U	21 U	1100 U	940 U	190 U
Hexachlorobenzene	410	63 U	15 U	780 U	670 U	140 U
Phenanthrene	50,000**	76 U	1200	92000	4200 J	160 U
Anthracene	50,000**	81 U	170 J	18000 J	860 U	180 U
Carbazole		75 U	120 J	920 U	790 U	160 U
Di-n-butylphthalate	8,100	45 U	11 U	550 U	480 U	98 U
Fluoranthene	50,000**	47 U	1900	320000	12000 J	100 U
Pyrene	50,000**	60 U	1400	260000	11000 J	130 U
Butylbenzylphthalate	50,000**	110 U	27 U	1400 U	1200 U	250 U
3,3-Dichlorobenzidine		540 U	130 U	6700 U	5800 U	1200 U
Benzo(a)anthracene	224 or MDL	51 U	660 J	150000	7300 J	110 U
Chrysene	400	110 U	790 J	130000	7400 J	230 U
bis(2-Ethylhexyl)phthalate	50,000**	78 U	19 U	960 U	820 U	170 U
Di-n-octyl phthalate	50,000**	81 U	19 U	990 U	860 U	180 U
Benzo(b)fluoranthene	1,100	180 U	1200 J	180000 J	8100 J	390 U
Benzo(k)fluoranthene	1,100	120 U	470 J	64000	6800 J	250 U
Benzo(a)pyrene	61 or MDL	58 U	460 J	100000	6800 J	130 U
Indeno(1,2,3-cd)pyrene	3,200	82 U	160 J	16000 J	870 U	180 U
Dibenz(a,h)anthracene	14 or MDL	99 U	24 U	1200 U	1100 U	220 U
Benzo(g,h,i)perylene	50,000**	150 U	200 J	25000 J	3900 J	320 U
Total Confident Conc. SVOC		0	9,530	1,363,000	67,500	0
Total TICs		0	13,530	265,000	70,000	0

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 1. Surficial Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

PCBs and Metals Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	SS-1 S3753-01 07/22/04 1.0 ug/Kg	SS-2 S3753-02 07/22/04 1.0 ug/Kg	SS-3 S3753-03 07/22/04 1.0 ug/Kg	SS-4 S3753-04 07/22/04 1.0 ug/Kg	SS-5 S3753-05 07/22/04 1.0 ug/Kg	SS-5DL S3753-05DL 07/22/04 10.0 ug/Kg	SS-6 S3753-06 07/22/04 1.0 ug/Kg
Aroclor-1016	1,000	6.1 U	5.7 U	5.7 U	5.9 U	7.4 U	74 UD	6.4 U
Aroclor-1221	1,000	4.1 U	3.9 U	3.9 U	4.0 U	5.0 U	50 UD	4.4 U
Aroclor-1232	1,000	2.8 U	2.6 U	2.6 U	2.7 U	3.4 U	34 UD	3.0 U
Aroclor-1242	1,000	3.6 U	3.4 U	3.4 U	3.5 U	4.4 U	44 UD	3.8 U
Aroclor-1248	1,000	4.3 U	4.0 U	4.0 U	4.1 U	5.2 U	52 UD	4.5 U
Aroclor-1254	1,000	1.6 U	1.5 U	1.5 U	1.5 U	1.9 U	19 UD	1.7 U
Aroclor-1260	1,000	3.4 U	3.2 U	3.2 U	3.3 U	1200 EJ	1000 D	1700 EJ
Units **COMPOUND**		**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**		**mg/Kg**
Arsenic	7.5 or SB/(5.89)	15.6	7.430	11.5	24.8	4.890		9.240
Barium	300 or SB/(52.5)	170	68.0	175	85.7	127		159
Cadmium	1 or SB/(1.93)	2.440	8.700	2.760	3.310	2.190		2.710
Chromium	10 or SB/(15.8)	88.7	58.2	18.2	74.3	14.6		27.0
Lead	SB/(87.9)	908 J	78.4 J	185 J	414 J	210 J		265 J
Selenium	2 or SB/(1.25)	2.500	1.400	1.030 J	3.210	2.150		1.100 J
Silver	SB/(0.117)	1.120 J	240	0.534 J	2.070	0.149 U		0.262 J
Mercury	0.1	0.40	0.13	0.11	0.18	0.34		0.39

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil

Table 1. Surficial Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

PCBs and Metals Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	SS-6DL S3753-06DL 07/22/04 10.0 ug/Kg	SS-7 S3753-07 07/22/04 1.0 ug/Kg	SS-7DL S3753-07DL 07/22/04 10.0 ug/Kg	SS-8 S3753-08 07/22/04 1.0 ug/Kg	SS-9 S3753-09 07/22/04 1.0 ug/Kg	SS-10 S3753-10 07/22/04 1.0 ug/Kg	SS-11 S3753-11 07/22/04 1.0 ug/Kg
Aroclor-1016	1,000	64 UD	6.9 U	69 UD	6.1 U	5.9 U	6.2 U	6.2 U
Aroclor-1221	1,000	44 UD	4.7 U	47 UD	4.2 U	4.0 U	4.2 U	4.2 U
Aroclor-1232	1,000	30 UD	3.2 U	32 UD	2.8 U	2.7 U	2.9 U	2.9 U
Aroclor-1242	1,000	38 UD	4.1 U	41 UD	3.6 U	3.5 U	3.7 U	3.7 U
Aroclor-1248	1,000	45 UD	4.9 U	49 UD	4.3 U	4.1 U	4.4 U	4.3 U
Aroclor-1254	1,000	17 UD	1.8 U	18 UD	1.6 U	1.5 U	1.6 U	1.6 U
Aroclor-1260	1,000	1500 D	3600 EJ	3400 D	3.4 U	3.3 U	3.5 U	3.5 U
Units COMPOUND			mg/Kg		mg/Kg	mg/Kg	mg/Kg	mg/Kg
Arsenic	7.5 or SB/(5.89)		19.2		8.800	9.990	10.2	6.780
Barium	300 or SB/(52.5)		318		70.6	134	179	38.4
Cadmium	1 or SB/(1.93)		3.730		2.290	2.800	2.900	2.080
Chromium	10 or SB/(15.8)		146		15.4	21.3	18.9	12.6
Lead	SB/(87.9)		456 J		58.8 J	289 J	657 J	25.4 J
Selenium	2 or SB/(1.25)		2.820		1.860	1.140	1.760	1.130 J
Silver	SB/(0.117)		2.020		0.123 U	0.119 U	0.524 J	0.126 U
Mercury	0.1		1.3		0.07	0.11	0.22	0.02

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 1. Surficial Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

PCBs and Metals Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	SS-12 S3753-12 07/22/04 1.0 ug/Kg	SS-13 S3753-13 07/22/04 1.0 ug/Kg	SS-14 S3753-14 07/22/04 1.0 ug/Kg	SS-14B S3753-15 07/22/04 1.0 ug/Kg	SS-15 S3753-16 07/22/04 1.0 ug/Kg	SS-16 S3753-17 07/22/04 1.0 ug/Kg	SS-17 S3753-18 07/22/04 1.0 ug/Kg
Aroclor-1016	1,000	5.7 U	5.9 U	5.5 U	5.6 U	6.2 U	5.5 U	6.3 U
Aroclor-1221	1,000	3.9 U	4.0 U	3.7 U	3.8 U	4.3 U	3.8 U	4.3 U
Aroclor-1232	1,000	2.7 U	2.7 U	2.5 U	2.6 U	2.9 U	2.6 U	2.9 U
Aroclor-1242	1,000	3.4 U	3.5 U	3.2 U	3.3 U	3.7 U	3.3 U	3.7 U
Aroclor-1248	1,000	4.0 U	4.2 U	3.8 U	3.9 U	4.4 U	3.9 U	4.4 U
Aroclor-1254	1,000	1.5 U	1.5 U	1.4 U	1.4 U	1.6 U	1.4 U	1.6 U
Aroclor-1260	1,000	3.2 U	3.4 U	3.1 U	3.2 U	3.5 U	3.1 U	3.6 U
Units COMPOUND		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		
Arsenic	7.5 or SB/(5.89)	6.770	7.340	7.550	6.570	6.580	5.070	8.840
Barium	300 or SB/(52.5)	66.1	121	83.5	72.2	78.9	374	164
Cadmium	1 or SB/(1.93)	2.090	1.720	2.060	1.570	2.240	1.610	2.620
Chromium	10 or SB/(15.8)	13.2	10.9	12.8	8.790	15.3	11.3	15.2
Lead	SB/(87.9)	80.6 J	447 J	166 J	141 J	71.6 J	262 J	793 J
Selenium	2 or SB/(1.25)	1.060 J	1.470	1.350	1.170	1.740	0.777 J	1.390
Silver	SB/(0.117)	0.115 U	0.121 U	0.112 U	0.113 U	0.621 J	0.113 U	0.127 U
Mercury	0.1	0.03	0.13	0.07	0.13	0.07	0.12	0.10

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm , Total Semi-VOCs<500ppm , and individual Semi-VOCs<50ppm

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 1. Surficial Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

PCBs and Metals Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	SS-18 S3753-19 07/22/04 1.0 ug/Kg	SS-19 S3754-10 07/22/04 1.0 ug/Kg	SS-20 S3754-01 07/22/04 1.0 ug/Kg	SS-21 S3754-02 07/22/04 1.0 ug/Kg	SS-22 S3754-03 07/22/04 1.0 ug/Kg	SS-23 S3754-04 07/22/04 1.0 ug/Kg	SS-24 S3754-05 07/22/04 1.0 ug/Kg
Aroclor-1016	1,000	6.0 U	6.2 U	6.0 U	5.8 U	6.1 U	6.5 U	5.9 U
Aroclor-1221	1,000	4.1 U	4.2 U	4.1 U	3.9 U	4.2 U	4.5 U	4.0 U
Aroclor-1232	1,000	2.8 U	2.9 U	2.8 U	2.7 U	2.8 U	3.0 U	2.7 U
Aroclor-1242	1,000	3.6 U	3.7 U	3.5 U	3.4 U	3.6 U	3.9 U	3.5 U
Aroclor-1248	1,000	4.2 U	4.3 U	4.2 U	4.1 U	4.3 U	4.6 U	4.2 U
Aroclor-1254	1,000	1.6 U	1.6 U	1.5 U	1.5 U	1.6 U	1.7 U	1.5 U
Aroclor-1260	1,000	3.4 U	140	83	67	290	3.7 U	140
Units COMPOUND			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Arsenic	7.5 or SB/(5.89)	8.960	21.5	9.450	8.460	15.1	8.790	8.870
Barium	300 or SB/(52.5)	130	92.7	123	57.6	80.4	51.7	62.1
Cadmium	1 or SB/(1.93)	2.500	2.340	2.920	2.100	2.500	3.400	2.460
Chromium	10 or SB/(15.8)	17.0	123 J	90.0 J	14.4 J	24.4 J	44.9 J	16.1 J
Lead	SB/(87.9)	273 J	245 J	261 J	73.7 J	130 J	139 J	192 J
Selenium	2 or SB/(1.25)	0.930 J	1.140 J	1.300	1.510	1.720	1.940	1.580
Silver	SB/(0.117)	0.124 U	0.683 J	0.120 U	0.119 U	0.124 U	1.130 J	0.120 U
Mercury	0.1	0.08	0.57 J	0.27 J	0.11 J	0.11 J	0.10 J	0.08 J

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil

Table 1. Surficial Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

PCBs and Metals Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	SS-25 S3754-06 07/22/04 1.0 ug/Kg	SS-26 S3753-20 07/22/04 1.0 ug/Kg	SS-27 S3754-07 07/22/04 1.0 ug/Kg	SS-28 S3754-08 07/22/04 1.0 ug/Kg	SS-29 S3754-09 07/22/04 1.0 ug/Kg
Aroclor-1016	1,000	5.3 U	6.4 U	6.6 U	5.6 U	5.7 U
Aroclor-1221	1,000	3.6 U	4.4 U	4.5 U	3.8 U	3.9 U
Aroclor-1232	1,000	2.5 U	3.0 U	3.0 U	2.6 U	2.6 U
Aroclor-1242	1,000	3.2 U	3.8 U	3.9 U	3.3 U	3.4 U
Aroclor-1248	1,000	3.7 U	4.5 U	4.6 U	3.9 U	4.0 U
Aroclor-1254	1,000	1.4 U	1.7 U	1.7 U	1.4 U	1.5 U
Aroclor-1260	1,000	50 PJ	3.6 U	99 PJ	86	3.2 U
Units COMPOUND		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Arsenic	7.5 or SB/(5.89)	5.540	22.1	20.1	9.680	5.890
Barium	300 or SB/(52.5)	15.1 J	123	101	41.6	52.5
Cadmium	1 or SB/(1.93)	0.973	2.220	3.220	2.480	1.930
Chromium	10 or SB/(15.8)	5.940 J	627	32.7 J	15.6 J	15.8 J
Lead	SB/(87.9)	22.8 J	189 J	406 J	138 J	87.9 J
Selenium	2 or SB/(1.25)	0.320 U	3.050	2.120	0.602 J	1.250
Silver	SB/(0.117)	0.107 U	1.960	0.809 J	0.114 U	0.117 U
Mercury	0.1	0.03 J	0.18	0.27 J	0.24 J	0.04 J

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm.. Total Semi-VOCs<500ppm , and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 2. Subsurface Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard

Volatile Organics Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	TP-1S-1 S3970-01 08/02/04 1.0 ug/Kg	TP-5S-1 S3970-02 08/02/04 1.0 ug/Kg	TP-6S-1 S3970-03 08/02/04 1.0 ug/Kg	TP-8S-1 S3970-04 08/03/04 1.0 ug/Kg	TP-9S-1 S3970-05 08/03/04 1.0 ug/Kg	TP-9S-1RE S3970-05RE 08/03/04 1.0 ug/Kg	TP-18S-1 S3970-06 08/03/04 1.0 ug/Kg	TP-19S-1 S3970-07 08/04/04 1.0 ug/Kg	TP-20S-1 S3970-08 08/04/04 1.0 ug/Kg	TP-20S-1RE S3970-08RE 08/04/04 1.0 ug/Kg
Chloromethane		110 U	0.42 U	0.37 U	130 U	0.36 U	0.36 U	120 U	100 U	0.44 U	110 U
Vinyl Chloride	200	44 U	0.30 U	0.26 U	49 U	0.26 U	0.26 U	45 U	40 U	0.31 U	44 U
Bromomethane		130 U	0.90 U	0.80 U	140 U	0.77 U	0.77 U	130 U	120 U	0.94 U	130 U
Chloroethane	1,900	150 U	0.66 U	0.59 U	160 U	0.57 U	0.57 U	150 U	130 U	0.70 U	150 U
1,1-Dichloroethene	200	53 U	0.27 U	0.24 U	59 U	0.23 U	0.23 U	54 U	48 U	0.29 U	54 U
Acetone	200	540 U	34 J	8.4 U	610 U	8.1 U	8.1 U	3500 J	500 U	63	550 U
Carbon Disulfide	2,700	64 U	0.13 U	1.6 J	72 U	0.11 U	0.11 U	66 U	59 U	0.13 U	65 U
Methylene Chloride	100	100 U	4.4 J	4.5 J	110 U	2.6 J	1.8 J	110 U	94 U	0.91 U	100 U
trans-1,2-Dichloroethene	300	85 U	0.47 U	0.42 U	94 U	0.40 U	0.40 U	87 U	77 U	0.49 U	86 U
1,1-Dichloroethane	200	35 U	0.45 U	0.40 U	40 U	0.38 U	0.38 U	36 U	32 U	0.47 U	36 U
2-Butanone	300	470 U	2.9 U	2.6 U	520 U	2.5 U	2.5 U	480 U	430 U	3.0 U	470 U
Carbon Tetrachloride	600	77 U	0.38 U	0.33 U	86 U	0.32 U	0.32 U	79 U	71 U	0.40 U	78 U
cis-1,2-Dichloroethene		130 U	0.45 U	0.40 U	140 U	0.38 U	0.38 U	130 U	120 U	0.47 U	130 U
Chloroform	300	95 U	0.30 U	0.27 U	110 U	0.26 U	0.26 U	97 U	87 U	0.32 U	96 U
1,1,1-Trichloroethane	800	67 U	0.34 U	0.30 U	75 U	0.29 U	0.29 U	69 U	61 U	0.36 U	68 U
Benzene	60	40 U	0.26 U	0.23 U	44 U	0.22 U	0.22 U	2300	36 U	0.27 U	40 U
1,2-Dichloroethane	100	53 U	3.9 U	3.5 U	59 U	3.3 U	3.3 U	54 U	48 U	4.1 U	53 U
Trichloroethene	700	110 U	0.41 U	0.36 U	120 U	0.35 U	0.35 U	110 U	100 U	0.43 U	110 U
1,2-Dichloropropane		52 U	0.42 U	0.38 U	58 U	0.36 U	0.36 U	54 U	48 U	0.45 U	53 U
Bromodichloromethane		57 U	0.42 U	0.37 U	64 U	0.36 U	0.36 U	59 U	52 U	0.44 U	58 U
4-Methyl-2-Pentanone	1,000	220 U	3.0 U	2.7 U	240 U	2.6 U	2.6 U	220 U	200 U	3.2 U	220 U
Toluene	1,500	64 U	0.33 U	0.29 U	290 J	3.2 J	2.8 J	150 J	200 J	0.35 U	64 U
t-1,3-Dichloropropene		70 U	0.32 U	0.29 U	78 U	0.28 U	0.28 U	72 U	64 U	0.34 U	71 U
cis-1,3-Dichloropropene		25 U	0.25 U	0.22 U	28 U	0.21 U	0.21 U	26 U	23 U	0.26 U	25 U
1,1,2-Trichloroethane		85 U	0.64 U	0.57 U	95 U	0.55 U	0.55 U	87 U	78 U	0.67 U	86 U
2-Hexanone		110 U	4.0 U	3.6 U	120 U	3.5 U	3.5 U	110 U	99 U	4.3 U	110 U
Dibromochloromethane		62 U	0.37 U	0.33 U	69 U	0.32 U	0.32 U	64 U	57 U	0.39 U	63 U
Tetrachloroethene	1,400	54 U	0.80 U	0.71 U	61 U	0.69 U	0.69 U	56 U	50 U	9.6	55 U
Chlorobenzene	1,700	61 U	0.45 U	0.40 U	68 U	0.38 U	0.38 U	13000	55 U	0.47 U	61 U
Ethyl Benzene	5,500	67 U	0.32 U	0.28 U	530 J	0.27 U	0.27 U	69 U	420 J	0.33 U	68 U
m/p-Xylenes	1,200	560 J	0.65 U	1.1 J	4900	3.3 J	2.8 J	160 U	1200 J	0.69 U	160 U
o-Xylene	1,200	60 U	0.55 U	0.49 U	610 J	0.47 U	0.47 J	62 U	1300	0.58 U	61 U
Styrene		56 U	0.40 U	0.35 U	63 U	0.34 U	0.34 U	58 U	52 U	0.42 U	57 U
Bromoform		41 U	0.38 U	0.34 U	46 U	0.32 U	0.32 U	43 U	38 U	0.40 U	42 U
1,1,2,2-Tetrachloroethane	600	81 U	0.67 U	0.59 U	91 U	0.57 U	0.57 U	84 U	75 U	0.71 U	83 U
Total Confident Conc. VOC		560	38.4	7.2	6330	9.1	7.4	18950	3120	72.6	0
Total TICs		22400	0	385	235000	299	0	101300	99700	4140	0

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 2. Subsurface Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard

Volatile Organics Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	TP-23S-1 S3970-09 08/04/04 1.0 ug/Kg	TP-24S-1 S3970-10 08/04/04 1.0 ug/Kg	TP-28S-1 S4063-01 08/08/04 1.0 ug/Kg	TP-30S-1 S4063-02 08/08/04 10.0 ug/Kg	TP-34S-1 S4063-03 08/08/04 1.0 ug/Kg	TP-35S-1 S4063-04 08/08/04 1.0 ug/Kg	TP-37S-1 S4063-05 08/06/04 5.0 ug/Kg	TP-38S-1 S4063-06 08/06/04 1.0 ug/Kg	TP-39S-1 S4063-07 08/06/04 1.0 ug/Kg	TP-41S-1 S4063-08 08/06/04 1.0 ug/Kg	TP-42S-1 S4063-09 08/06/04 1.0 ug/Kg
Chloromethane		120 U	0.48 U	0.40 U	3.9 U	0.39 U	0.41 U	2.0 U	0.43 U	0.39 U	0.42 U	0.41 U
Vinyl Chloride	200	46 U	0.34 U	0.28 U	2.8 U	0.28 U	0.29 U	1.4 U	0.31 U	0.28 U	0.30 U	0.29 U
Bromomethane		130 U	1.0 U	0.85 U	8.4 U	0.83 U	0.87 U	4.3 U	0.92 U	0.83 U	0.91 U	0.87 U
Chloroethane	1,900	150 U	0.76 U	0.63 U	6.2 U	0.62 U	0.65 U	3.2 U	0.68 U	0.62 U	0.67 U	0.65 U
1,1-Dichloroethene	200	55 U	0.31 U	0.26 U	2.6 U	0.25 U	0.27 U	1.3 U	0.28 U	0.25 U	0.28 U	0.27 U
Acetone	200	570 U	100	9.0 U	270 J	8.8 U	9.2 U	250 J	61 J	8.8 U	9.6 U	9.2 U
Carbon Disulfide	2,700	67 U	5.2 J	0.12 U	1.2 U	0.12 U	0.12 U	56	0.13 U	0.12 U	0.13 U	0.12 U
Methylene Chloride	100	110 U	4.3 J	0.82 U	8.1 U	0.80 U	0.84 U	4.1 U	0.88 U	0.80 U	0.87 U	0.84 U
trans-1,2-Dichloroethene	300	88 U	0.54 U	0.45 U	4.4 U	0.44 U	0.46 U	2.3 U	0.48 U	0.44 U	0.48 U	0.46 U
1,1-Dichloroethane	200	37 U	0.51 U	0.43 U	4.2 U	0.42 U	0.44 U	2.2 U	0.46 U	0.42 U	0.45 U	0.44 U
2-Butanone	300	480 U	16 J	2.7 U	27 U	2.7 U	2.8 U	14 U	3.0 U	2.7 U	2.9 U	2.8 U
Carbon Tetrachloride	600	80 U	0.43 U	0.36 U	3.5 U	0.35 U	0.37 U	1.8 U	0.39 U	0.35 U	0.38 U	0.37 U
cis-1,2-Dichloroethene		130 U	0.51 U	0.42 U	4.2 U	0.41 U	0.43 U	2.1 U	0.46 U	0.41 U	0.45 U	0.43 U
Chloroform	300	98 U	0.34 U	0.29 U	2.8 U	0.28 U	0.29 U	1.4 U	0.31 U	0.28 U	0.30 U	0.29 U
1,1,1-Trichloroethane	800	70 U	0.39 U	0.33 U	3.2 U	0.32 U	0.33 U	1.7 U	0.35 U	0.32 U	0.35 U	0.33 U
Benzene	60	41 U	0.29 U	0.24 U	43 J	0.24 U	0.25 U	1.2 U	0.26 U	0.24 U	0.26 U	0.25 U
1,2-Dichloroethane	100	55 U	4.5 U	3.7 U	37 U	3.6 U	3.8 U	19 U	4.0 U	3.6 U	3.9 U	3.8 U
Trichloroethene	700	110 U	0.46 U	0.39 U	3.8 U	0.38 U	0.40 U	2.0 U	0.42 U	0.38 U	0.41 U	0.40 U
1,2-Dichloropropane		54 U	0.49 U	0.40 U	4.0 U	0.39 U	0.41 U	2.0 U	0.44 U	0.39 U	0.43 U	0.41 U
Bromodichloromethane		60 U	0.48 U	0.40 U	4.0 U	0.39 U	0.41 U	2.0 U	0.43 U	0.39 U	0.43 U	0.41 U
4-Methyl-2-Pentanone	1,000	230 U	3.5 U	2.9 U	29 U	2.8 U	3.0 U	15 U	3.1 U	2.8 U	3.1 U	3.0 U
Toluene	1,500	66 U	0.38 U	0.31 U	320	0.30 U	0.32 U	1.6 U	0.34 U	0.30 U	0.33 U	0.32 U
t-1,3-Dichloropropene		73 U	0.37 U	0.31 U	3.0 U	0.30 U	0.32 U	1.6 U	0.33 U	0.30 U	0.33 U	0.32 U
cis-1,3-Dichloropropene		26 U	0.28 U	0.23 U	2.3 U	0.23 U	0.24 U	1.2 U	0.25 U	0.23 U	0.25 U	0.24 U
1,1,2-Trichloroethane		89 U	0.73 U	0.61 U	6.0 U	0.60 U	0.62 U	3.1 U	0.66 U	0.60 U	0.65 U	0.62 U
2-Hexanone		110 U	4.6 U	3.9 U	38 U	3.8 U	3.9 U	19 U	4.2 U	3.8 U	4.1 U	3.9 U
Dibromochloromethane		65 U	0.42 U	0.35 U	3.5 U	0.34 U	0.36 U	1.8 U	0.38 U	0.34 U	0.37 U	0.36 U
Tetrachloroethene	1,400	57 U	0.92 U	0.77 U	110	0.75 U	9.3	3.9 U	11	0.75 U	5.0 J	4.1 J
Chlorobenzene	1,700	63 U	0.51 U	0.42 U	4.2 U	0.41 U	0.43 U	2.1 U	0.46 U	0.41 U	0.45 U	0.43 U
Ethyl Benzene	5,500	70 U	0.36 U	0.30 U	350	0.29 U	0.31 U	1.5 U	0.32 U	0.29 U	0.32 U	3.5 J
m/p-Xylenes	1,200	170 U	0.74 U	0.62 U	970	0.60 U	0.63 U	3.1 U	0.67 U	0.60 U	0.66 U	3.1 J
o-Xylene	1,200	63 U	0.63 U	0.52 U	1100	0.51 U	0.53 U	2.6 U	0.56 U	0.51 U	0.55 U	2.6 J
Styrene		59 U	0.45 U	0.38 U	3.7 U	0.37 U	0.39 U	1.9 U	0.41 U	0.37 U	0.40 U	0.39 U
Bromoform		43 U	0.43 U	0.36 U	3.6 U	0.35 U	0.37 U	1.8 U	0.39 U	0.35 U	0.38 U	0.37 U
1,1,2,2-Tetrachloroethane	600	85 U	0.77 U	0.64 U	6.3 U	0.62 U	0.65 U	3.2 U	0.69 U	0.62 U	0.68 U	0.65 U
Total Confident Conc. VOC		0	125.5	0	3163	0	9.3	306	72	0	5	13.3
Total TICs		103700	0	0	22400	3551	2460	13520	2000	1980	7320	225

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.
E - Value exceeds calibration range.
D - Compound identified in analysis at a secondary dilution factor.
* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.
NA-not analyzed
MDL - Method Detection Limit
** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm
1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 2. Subsurface Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard

Volatile Organics Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	AT-7S-1 S3897-01 07/29/04 1.0 ug/Kg	B-7(14-16) S4313-01 06/18/04 10.0 ug/Kg	B-7(14-16)RE S4313-01RE 06/18/04 10.0 ug/Kg	TRIPBLANK S4063-10 06/08/04 1.0 ug/L
Chloromethane		0.38 U	3.9 U	3.9 U	0.68 U
Vinyl Chloride	200	0.27 U	2.8 U	2.8 U	0.27 U
Bromomethane		0.82 U	8.4 U	8.4 U	0.78 U
Chloroethane	1,900	0.61 U	6.2 U	6.2 U	0.88 U
1,1-Dichloroethene	200	0.25 U	2.6 U	2.6 U	0.32 U
Acetone	200	8.7 U	420	360	3.3 U
Carbon Disulfide	2,700	0.12 U	1.2 U	1.2 U	0.39 U
Methylene Chloride	100	0.79 U	67	48 J	0.62 U
trans-1,2-Dichloroethene	300	0.43 U	4.4 U	4.4 U	0.51 U
1,1-Dichloroethane	200	0.41 U	4.2 U	4.2 U	0.22 U
2-Butanone	300	2.6 U	27 U	27 U	2.8 U
Carbon Tetrachloride	600	0.35 U	3.5 U	3.5 U	0.47 U
cis-1,2-Dichloroethene		0.41 U	4.2 U	4.2 U	0.77 U
Chloroform	300	0.28 U	2.8 U	2.8 U	0.58 U
1,1,1-Trichloroethane	800	0.32 U	3.2 U	3.2 U	0.41 U
Benzene	60	0.23 U	2.4 U	2.4 U	0.24 U
1,2-Dichloroethane	100	3.6 U	37 U	37 U	0.32 U
Trichloroethene	700	0.37 U	3.8 U	3.8 U	0.67 U
1,2-Dichloropropane		0.39 U	4.0 U	4.0 U	0.63 U
Bromodichloromethane		0.39 U	4.0 U	4.0 U	0.35 U
4-Methyl-2-Pentanone	1,000	2.8 U	29 U	29 U	1.3 U
Toluene	1,500	0.30 U	3.1 U	3.1 U	0.39 U
t-1,3-Dichloropropene		0.30 U	3.0 U	3.0 U	0.42 U
cis-1,3-Dichloropropene		0.23 U	2.3 U	2.3 U	0.15 U
1,1,2-Trichloroethane		0.59 U	6.0 U	6.0 U	0.52 U
2-Hexanone		3.7 U	38 U	38 U	0.66 U
Dibromochloromethane		0.34 U	3.5 U	3.5 U	0.38 U
Tetrachloroethene	1,400	0.74 U	7.6 U	7.6 U	0.33 U
Chlorobenzene	1,700	0.41 U	4.2 U	4.2 U	0.37 U
Ethyl Benzene	5,500	0.29 U	3.0 U	3.0 U	0.41 U
m/p-Xylenes	1,200	0.60 U	55 J	26 J	0.96 U
o-Xylene	1,200	0.50 U	5.1 U	5.1 U	0.37 U
Styrene		0.36 U	3.7 U	3.7 U	0.34 U
Bromoform		0.35 U	3.6 U	3.6 U	0.25 U
1,1,2,2-Tetrachloroethane	600	0.62 U	6.3 U	6.3 U	0.50 U
Total Confident Conc. VOC		0	542	434	0
Total TICs		18	16860	0	

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm , Total Semi-VOCs<500ppm , and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 2. Subsurface Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard

Semivolatile Organics Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	TP-1S-1 S3970-01 08/02/04 1.0 ug/Kg	TP-1S-1RE S3970-01RE 08/02/04 1.0 ug/Kg	TP-5S-1 S3970-02 08/02/04 1.0 ug/Kg	TP-6S-1 S3970-03 08/02/04 1.0 ug/Kg	TP-6S-1DL S3970-03DL 08/02/04 5.0 ug/Kg	TP-8S-1 S3970-04 08/03/04 1.0 ug/Kg	TP-8S-1RE S3970-04RE 08/03/04 1.0 ug/Kg	TP-9S-1 S3970-05 08/03/04 1.0 ug/Kg	TP-9S-1RE S3970-05RE 08/03/04 1.0 ug/Kg	TP-16S-1 S3970-06 08/03/04 1.0 ug/Kg
bis(2-Chloroethyl)ether		21 U	21 U	20 U	36 U	180 UD	48 U	48 U	180 U	180 U	220 U
1,2-Dichlorobenzene	7,900	23 U	23 U	22 U	40 U	200 UD	53 U	53 U	190 U	190 U	240 U
1,3-Dichlorobenzene	1,600	16 U	16 U	15 U	27 U	140 UD	36 U	36 U	130 U	130 U	160 U
1,4-Dichlorobenzene	8,500	18 U	18 U	17 U	31 U	150 UD	40 U	40 U	150 U	150 U	180 U
2,2-oxybis(1-Chloropropane)		23 U	23 U	22 U	40 U	200 UD	53 U	53 U	190 U	190 U	240 U
N-Nitroso-di-n-propylamine		19 U	19 U	18 U	32 U	160 UD	43 U	43 U	160 U	160 U	200 U
Hexachloroethane		21 U	21 U	20 U	35 U	180 UD	46 U	46 U	170 U	170 U	210 U
Nitrobenzene	200	22 U	22 U	21 U	37 U	190 UD	49 U	49 U	180 U	180 U	220 U
Isophorone	4,400	16 U	16 U	15 U	27 U	140 UD	36 U	36 U	130 U	130 U	160 U
bis(2-Chloroethoxy)methane		20 U	20 U	19 U	33 U	170 UD	44 U	44 U	160 U	160 U	200 U
1,2,4-Trichlorobenzene	3,400	12 U	12 U	12 U	21 U	110 UD	28 U	28 U	100 U	100 U	130 U
Naphthalene	13,000	9.4 U	9.4 U	91 J	16 U	80 UD	320 J	340 J	78 U	78 U	96 U
4-Chloroaniline	220 or MDL	160 U	160 U	150 U	270 U	1400 UD	360 U	360 U	1300 U	1300 U	1600 U
Hexachlorobutadiene		15 U	15 U	14 U	26 U	130 UD	34 U	34 U	130 U	130 U	160 U
2-Methylnaphthalene	36,400	57 J	54 J	7.1 U	13 U	63 UD	130 J	130 J	62 U	62 U	76 U
Hexachlorocyclopentadiene		11 U	11 U	10 U	18 U	92 UD	24 U	24 U	90 U	90 U	110 U
2-Chloronaphthalene		9.0 U	9.0 U	8.6 U	15 U	76 UD	20 U	20 U	75 U	75 U	92 U
2-Nitroaniline	430 or MDL	16 U	16 U	15 U	27 U	130 UD	35 U	35 U	130 U	130 U	160 U
Dimethylphthalate	2,000	10 U	10 U	9.9 U	18 U	88 UD	23 U	23 U	85 U	85 U	110 U
Acenaphthylene	41,000	13 U	13 U	12 U	850	640 JD	300 J	350 J	110 U	110 U	130 U
2,6-Dinitrotoluene	1,000	18 U	18 U	18 U	31 U	160 UD	41 U	41 U	150 U	150 U	190 U
3-Nitroaniline	500 or MDL	70 U	70 U	67 U	120 U	590 UD	160 U	160 U	580 U	580 U	710 U
Acenaphthene	50,000**	9.5 U	9.5 U	9.1 U	16 U	81 UD	780 J	760 J	79 U	79 U	98 U
Dibenzofuran	6,200	14 U	14 U	59 J	24 U	120 UD	150 J	160 J	120 U	120 U	150 U
2,4-Dinitrotoluene		8.6 U	8.6 U	8.2 U	15 U	73 UD	19 U	19 U	71 U	71 U	88 U
Diethylphthalate	71,000	14 U	14 U	13 U	23 U	120 UD	31 U	31 U	110 U	110 U	140 U
4-Chlorophenyl-phenylether		11 U	11 U	10 U	18 U	91 UD	24 U	24 U	89 U	89 U	110 U
Fluorene	50,000**	49 J	48 J	68 J	190 J	100 UD	910 J	830 J	100 U	100 U	130 U
4-Nitroaniline		34 U	34 U	32 U	57 U	290 UD	76 U	76 U	280 U	280 U	350 U
N-Nitrosodiphenylamine		11 U	11 U	10 U	19 U	93 UD	25 U	25 U	91 U	91 U	110 U
4-Bromophenyl-phenylether		11 U	11 U	11 U	19 U	96 UD	26 U	26 U	94 U	94 U	120 U
Hexachlorobenzene	410	8.1 U	8.1 U	7.7 U	14 U	69 UD	18 U	18 U	67 U	67 U	83 U
Phenanthrene	50,000**	240 J	230 J	1400	3300	2100 JD	4200 J	4300 J	80 U	80 U	1000 J
Anthracene	50,000**	62 J	69 J	100 J	710 J	570 JD	670 J	920 J	85 U	85 U	450 J
Carbazole		9.5 U	9.5 U	100 J	16 U	81 UD	420 J	460 J	79 U	79 U	98 U
Di-n-butylphthalate	8,100	5.7 U	5.7 U	5.5 U	9.8 U	49 UD	13 U	13 U	48 U	48 U	59 U
Fluoranthene	50,000**	250 J	250 J	2100	12000 EJ	4500 D	4400 J	6100 J	50 U	50 U	2100 J
Pyrene	50,000**	290 J	320 J	2400	7700 EJ	5200 D	6300	5600	64 U	360 J	2400 J
Butylbenzylphthalate	50,000**	14 U	14 U	14 U	25 U	120 UD	33 U	33 U	120 U	120 U	150 U
3,3-Dichlorobenzidine		69 U	69 U	66 U	120 U	590 UD	160 U	160 U	570 U	570 U	710 U
Benzo(a)anthracene	224 or MDL	130 J	130 J	630	3800	3100 JD	1400	1400	54 U	54 U	1800 J
Chrysene	400	150 J	160 J	1100	4000	3300 JD	2600	2700	110 U	110 U	2400 J
bis(2-Ethylhexyl)phthalate	50,000**	9.9 U	9.9 U	9.5 U	17 U	84 UD	22 U	22 U	82 U	82 U	100 U
Di-n-octyl phthalate	50,000**	10 U	10 U	9.9 U	18 U	88 UD	23 U	23 U	85 U	85 U	110 U
Benzo(b)fluoranthene	1,100	85 J	77 J	720	3700	2300 JD	1800	1400	190 U	190 U	2200 J
Benzo(k)fluoranthene	1,100	55 J	65 J	290 J	1400	990 JD	1700	1500	120 U	120 U	1000 J
Benzo(a)pyrene	61 or MDL	96 J	98 J	530	2500	1900 JD	1400	1400	62 U	62 U	1700 J
Indeno(1,2,3-cd)pyrene	3,200	73 J	50 J	460	530 J	1100 JD	23 U	130 J	87 U	87 U	1000 J
Dibenz(a,h)anthracene	14 or MDL	13 U	13 U	12 U	95 J	110 UD	28 U	28 U	100 U	100 U	130 U
Benzo(g,h,i)perylene	50,000**	48 J	19 U	340 J	500 J	760 JD	42 U	120 J	160 U	160 U	810 J
Total Confident Conc. SVOC		1585	1551	10388	21575	26460	27480	28600	0	360	16860
Total TICs		2670	0	2770	12300	0	69100	0	39100	0	100000

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil

Table 2. Subsurface Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard

Semivolatile Organics Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	TP-19S-1 S3970-07 08/04/04 10.0 ug/Kg	TP-19S-1RE S3970-07RE 08/04/04 10.0 ug/Kg	TP-20S-1 S3970-08 08/04/04 1.0 ug/Kg	TP-23S-1 S3970-09 08/04/04 1.0 ug/Kg	TP-23S-1RE S3970-09RE 08/04/04 1.0 ug/Kg	TP-24S-1 S3970-10 08/04/04 1.0 ug/Kg	TP-24S-1RE S3970-10RE 08/04/04 1.0 ug/Kg	TP-28S-1 S4063-01 08/08/04 1.0 ug/Kg	TP-30S-1 S4063-02 08/08/04 5.0 ug/Kg	TP-34S-1 S4063-03 08/08/04 1.0 ug/Kg	TP-35S-1 S4063-04 08/08/04 1.0 ug/Kg
bis(2-Chloroethyl)ether		1900 U	1900 U	43 U	44 U	44 U	23 U	23 U	39 U	960 U	38 U	20 U
1,2-Dichlorobenzene	7,900	2100 U	2100 U	48 U	49 U	49 U	26 U	26 U	43 U	1100 U	42 U	22 U
1,3-Dichlorobenzene	1,600	1500 U	1500 U	32 U	33 U	33 U	17 U	17 U	29 U	720 U	29 U	15 U
1,4-Dichlorobenzene	8,500	1600 U	1600 U	36 U	38 U	38 U	20 U	20 U	33 U	810 U	32 U	17 U
2,2-oxybis(1-Chloropropane)		2100 U	2100 U	47 U	49 U	49 U	26 U	26 U	43 U	1100 U	42 U	22 U
N-Nitroso-di-n-propylamine		1700 U	1700 U	39 U	40 U	40 U	21 U	21 U	35 U	860 U	34 U	18 U
Hexachloroethane		1900 U	1900 U	42 U	43 U	43 U	23 U	23 U	38 U	930 U	37 U	19 U
Nitrobenzene	200	2000 U	2000 U	44 U	46 U	46 U	24 U	24 U	40 U	990 U	39 U	21 U
Isophorone	4,400	1500 U	1500 U	32 U	34 U	34 U	18 U	18 U	29 U	720 U	29 U	15 U
bis(2-Chloroethoxy)methane		1800 U	1800 U	40 U	41 U	41 U	22 U	22 U	36 U	890 U	35 U	18 U
1,2,4-Trichlorobenzene	3,400	1100 U	1100 U	25 U	26 U	26 U	14 U	14 U	23 U	560 U	22 U	12 U
Naphthalene	13,000	860 U	860 U	19 U	20 U	20 U	10 U	10 U	150 J	420 U	240 J	8.8 U
4-Chloroaniline	220 or MDL	15000 U	15000 U	320 U	330 U	330 U	180 U	180 U	290 U	7200 U	290 U	150 U
Hexachlorobutadiene		1400 U	1400 U	31 U	32 U	32 U	17 U	17 U	28 U	680 U	27 U	14 U
2-Methylnaphthalene	36,400	680 U	680 U	15 U	16 U	16 U	8.2 U	8.2 U	14 U	7500 J	110 J	7.0 U
Hexachlorocyclopentadiene		990 U	990 U	22 U	23 U	23 U	12 U	12 U	20 U	490 U	19 U	10 U
2-Chloronaphthalene		820 U	820 U	18 U	19 U	19 U	9.9 U	9.9 U	16 U	410 U	16 U	8.4 U
2-Nitroaniline	430 or MDL	1400 U	1400 U	32 U	33 U	33 U	17 U	17 U	29 U	710 U	28 U	15 U
Dimethylphthalate	2,000	940 U	940 U	21 U	22 U	22 U	11 U	11 U	19 U	460 U	19 U	9.7 U
Acenaphthylene	41,000	1200 U	1200 U	26 U	27 U	27 U	14 U	14 U	280 J	580 U	210 J	12 U
2,6-Dinitrotoluene	1,000	1700 U	1700 U	37 U	38 U	38 U	20 U	20 U	34 U	830 U	33 U	17 U
3-Nitroaniline	500 or MDL	6400 U	6400 U	140 U	150 U	150 U	77 U	77 U	130 U	3100 U	130 U	65 U
Acenaphthene	50,000**	870 U	870 U	19 U	20 U	20 U	10 U	10 U	170 J	430 U	140 J	8.9 U
Dibenzofuran	6,200	1300 U	1300 U	29 U	30 U	30 U	16 U	16 U	140 J	640 U	26 U	13 U
2,4-Dinitrotoluene		790 U	790 U	17 U	18 U	18 U	9.5 U	9.5 U	16 U	390 U	15 U	8.1 U
Diethylphthalate	71,000	1200 U	1200 U	27 U	28 U	28 U	15 U	15 U	25 U	610 U	24 U	13 U
4-Chlorophenyl-phenylether		980 U	980 U	22 U	22 U	22 U	12 U	12 U	20 U	480 U	19 U	10 U
Fluorene	50,000**	1100 U	1100 U	25 U	26 U	26 U	13 U	13 U	160 J	550 U	260 J	11 U
4-Nitroaniline		3100 U	3100 U	68 U	71 U	71 U	37 U	37 U	62 U	1500 U	61 U	32 U
N-Nitrosodiphenylamine		1000 U	1000 U	22 U	23 U	23 U	12 U	12 U	20 U	490 U	20 U	10 U
4-Bromophenyl-phenylether		1000 U	1000 U	23 U	24 U	24 U	12 U	12 U	21 U	510 U	20 U	11 U
Hexachlorobenzene	410	740 U	740 U	16 U	17 U	17 U	8.9 U	8.9 U	15 U	360 U	15 U	7.6 U
Phenanthrene	50,000**	880 U	880 U	450 J	340 J	320 J	11 U	11 U	2700	5100 J	740 J	9.1 U
Anthracene	50,000**	940 U	940 U	95 J	22 U	91 J	11 U	11 U	590 J	460 U	290 J	9.7 U
Carbazole		870 U	870 U	19 U	20 U	20 U	10 U	10 U	410 J	430 U	17 U	8.9 U
Di-n-butylphthalate	8,100	520 U	520 U	12 U	12 U	12 U	6.3 U	6.3 U	10 U	260 U	10 U	5.4 U
Fluoranthene	50,000**	550 U	550 U	510 J	510 J	530 J	6.6 U	6.6 U	4900	270 U	2900	5.6 U
Pyrene	50,000**	700 U	700 U	650 J	630 J	650 J	8.5 U	8.5 U	4900	350 U	3100	61 J
Butylbenzylphthalate	50,000**	1300 U	1300 U	29 U	30 U	30 U	16 U	16 U	26 U	650 U	26 U	14 U
3,3-Dichlorobenzidine		6300 U	6300 U	140 U	140 U	140 U	76 U	76 U	130 U	3100 U	120 U	65 U
Benzo(a)anthracene	224 or MDL	590 U	590 U	290 J	330 J	320 J	7.2 U	7.2 U	3100	2500 J	1100	6.1 U
Chrysene	400	1200 U	1200 U	360 J	430 J	410 J	15 U	15 U	2600	3800 J	1100	13 U
bis(2-Ethylhexyl)phthalate	50,000**	900 U	900 U	20 U	21 U	21 U	11 U	11 U	140 J	450 U	130 J	76 J
Di-n-octyl phthalate	50,000**	940 U	940 U	21 U	22 U	22 U	11 U	11 U	19 U	460 U	19 U	9.7 U
Benzo(b)fluoranthene	1,100	2100 U	2100 U	260 J	450 J	480 J	25 U	25 U	2600	1000 U	1000	22 U
Benzo(k)fluoranthene	1,100	1300 U	1300 U	110 J	210 J	210 J	16 U	16 U	1300	670 U	370 J	14 U
Benzo(a)pyrene	61 or MDL	680 U	680 U	220 J	330 J	350 J	8.2 U	8.2 U	2100	340 U	580 J	7.0 U
Indeno(1,2,3-cd)pyrene	3,200	950 U	950 U	21 U	120 J	22 U	11 U	11 U	1200	470 U	310 J	9.8 U
Dibenz(a,h)anthracene	14 or MDL	1200 U	1200 U	26 U	26 U	26 U	14 U	14 U	180 J	570 U	23 U	12 U
Benzo(g,h,i)perylene	50,000**	1700 U	1700 U	38 U	110 J	100 J	21 U	21 U	1100	850 U	280 J	18 U
Total Confident Conc. SVOC		0	0	2945	3460	3461	0	0	28720	18900	12860	137
Total TICs		7900	0	4900	39400	0	590	0	7580	260000	7590	9130

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.
B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.
E - Value exceeds calibration range.
D - Compound identified in analysis at a secondary dilution factor.
* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.
NA-not analyzed
MDL - Method Detection Limit
** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.
1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 2. Subsurface Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard

Semivolatile Organics Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	TP-37S-1 S4063-05 08/06/04 1.0 ug/Kg	TP-38S-1 S4063-06 08/06/04 1.0 ug/Kg	TP-39S-1 S4063-07 08/06/04 1.0 ug/Kg	TP-41S-1 S4063-08 08/06/04 1.0 ug/Kg	TP-42S-1 S4063-09 08/06/04 1.0 ug/Kg	AT-7S-1 S3897-01 07/29/04 1.0 ug/Kg	B-7(14-16) S4313-01 08/18/04 2.0 ug/Kg	B-7(14-16)DL S4313-01RE 08/18/04 10.0 ug/Kg
bis(2-Chloroethyl)ether		20 U	42 U	19 U	21 U	40 U	190 U	77 U	390 UD
1,2-Dichlorobenzene	7,900	22 U	46 U	21 U	23 U	44 U	210 U	85 U	430 UD
1,3-Dichlorobenzene	1,600	15 U	31 U	14 U	16 U	30 U	140 U	58 U	290 UD
1,4-Dichlorobenzene	8,500	17 U	35 U	16 U	18 U	34 U	160 U	65 U	330 UD
2,2-oxybis(1-Chloropropane)		22 U	46 U	21 U	23 U	44 U	210 U	85 U	420 UD
N-Nitroso-di-n-propylamine		18 U	37 U	17 U	19 U	36 U	170 U	69 U	340 UD
Hexachloroethane		19 U	40 U	18 U	20 U	39 U	180 U	75 U	370 UD
Nitrobenzene	200	20 U	43 U	19 U	22 U	41 U	190 U	79 U	400 UD
Isophorone	4,400	15 U	32 U	14 U	16 U	30 U	140 U	58 U	290 UD
bis(2-Chloroethoxy)methane		18 U	39 U	17 U	19 U	37 U	180 U	71 U	360 UD
1,2,4-Trichlorobenzene	3,400	12 U	24 U	11 U	12 U	23 U	110 U	45 U	220 UD
Naphthalene	13,000	8.7 U	110 J	8.3 U	9.2 U	18 U	84 U	490 J	170 UD
4-Chloroaniline	220 or MDL	150 U	310 U	140 U	160 U	300 U	1400 U	580 U	2900 UD
Hexachlorobutadiene		14 U	30 U	13 U	15 U	28 U	130 U	55 U	270 UD
2-Methylnaphthalene	36,400	6.9 U	190 J	6.6 U	7.3 U	14 U	66 U	300 J	130 UD
Hexachlorocyclopentadiene		10 U	21 U	9.6 U	11 U	20 U	96 U	39 U	200 UD
2-Chloronaphthalene		8.4 U	18 U	8.0 U	8.8 U	17 U	80 U	33 U	160 UD
2-Nitroaniline	430 or MDL	15 U	31 U	14 U	15 U	29 U	140 U	57 U	280 UD
Dimethylphthalate	2,000	9.6 U	20 U	9.1 U	10 U	19 U	92 U	37 U	190 UD
Acenaphthylene	41,000	12 U	25 U	11 U	13 U	24 U	110 U	47 U	230 UD
2,6-Dinitrotoluene	1,000	17 U	36 U	16 U	18 U	34 U	160 U	67 U	330 UD
3-Nitroaniline	500 or MDL	65 U	140 U	62 U	68 U	130 U	620 U	250 U	1300 UD
Acenaphthene	50,000**	8.8 U	19 U	8.4 U	9.3 U	18 U	85 U	1400 J	1500 JD
Dibenzofuran	6,200	13 U	28 U	13 U	14 U	27 U	130 U	51 U	260 UD
2,4-Dinitrotoluene		8.0 U	17 U	7.6 U	8.5 U	16 U	77 U	31 U	160 UD
Diethylphthalate	71,000	13 U	27 U	12 U	13 U	25 U	120 U	49 U	250 UD
4-Chlorophenyl-phenylether		9.9 U	21 U	9.5 U	10 U	20 U	95 U	39 U	190 UD
Fluorene	50,000**	11 U	24 U	11 U	12 U	23 U	110 U	1600	1800 JD
4-Nitroaniline		31 U	66 U	30 U	33 U	63 U	300 U	120 U	610 UD
N-Nitrosodiphenylamine		10 U	22 U	9.7 U	11 U	21 U	97 U	40 U	200 UD
4-Bromophenyl-phenylether		11 U	22 U	10 U	11 U	21 U	100 U	41 U	210 UD
Hexachlorobenzene	410	7.5 U	16 U	7.2 U	7.9 U	15 U	72 U	29 U	150 UD
Phenanthrene	50,000**	9.0 U	180 J	8.6 U	9.5 U	410 J	86 U	8900	10000 D
Anthracene	50,000**	9.6 U	20 U	9.1 U	10 U	120 J	92 U	3200	3300 JD
Carbazole		8.8 U	19 U	8.4 U	9.3 U	18 U	85 U	550 J	170 UD
Di-n-butylphthalate	8,100	5.3 U	11 U	5.1 U	5.6 U	11 U	51 U	21 U	100 UD
Fluoranthene	50,000**	5.6 U	12 U	5.3 U	5.9 U	500 J	420 J	11000	18000 D
Pyrene	50,000**	7.1 U	15 U	6.8 U	7.6 U	500 J	670 J	16000 E	18000 D
Butylbenzylphthalate	50,000**	13 U	28 U	13 U	14 U	27 U	130 U	52 U	260 UD
3,3-Dichlorobenzidine		64 U	140 U	61 U	68 U	130 U	620 U	260 J	1300 UD
Benzo(a)anthracene	224 or MDL	6.1 U	13 U	5.8 U	6.4 U	240 J	58 U	11000	14000 D
Chrysene	400	13 U	120 J	12 U	13 U	270 J	120 U	11000	13000 D
bis(2-Ethylhexyl)phthalate	50,000**	44 J	19 U	52 J	74 J	19 U	88 U	280 J	180 UD
Di-n-octyl phthalate	50,000**	9.6 U	20 U	9.1 U	10 U	19 U	92 U	37 U	190 UD
Benzo(b)fluoranthene	1,100	21 U	45 U	20 U	23 U	200 J	200 U	19000 E	18000 D
Benzo(k)fluoranthene	1,100	14 U	29 U	13 U	14 U	100 J	130 U	7100	7500 JD
Benzo(a)pyrene	61 or MDL	6.9 U	15 U	6.6 U	7.3 U	170 J	66 U	12000	12000 D
Indeno(1,2,3-cd)pyrene	3,200	9.7 U	20 U	9.3 U	10 U	90 J	93 U	1800	2200 JD
Dibenz(a,h)anthracene	14 or MDL	12 U	25 U	11 U	12 U	24 U	110 U	420 J	230 UD
Benzo(g,h,i)perylene	50,000**	17 U	37 U	17 U	18 U	35 U	170 U	3200	3300 JD
Total Confident Conc. SVOC		44	600	52	74	2600	1090	109500	122600
Total TICs		6660	16200	4970	4450	2050	5410	53600	0

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil

Table 2. Subsurface Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard

PCBs and Metals Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	TP-1S-1 S3970-01 08/02/04 1.0 ug/Kg	TP-5S-1 S3970-02 08/02/04 1.0 ug/Kg	TP-6S-1 S3970-03 08/02/04 1.0 ug/Kg	TP-8S-1 S3970-04 08/03/04 1.0 ug/Kg	TP-8S-1DL S3970-04DL 08/03/04 100.0 ug/Kg	TP-9S-1 S3970-05 08/03/04 1.0 ug/Kg	TP-9S-1DL S3970-05DL 08/03/04 10.0 ug/Kg	TP-16S-1 S3970-06 08/03/04 1.0 ug/Kg	TP-16S-1DL S3970-06DL 08/03/04 100.0 ug/Kg	TP-19S-1 S3970-07 08/04/04 1.0 ug/Kg
Aroclor-1016	10,000	6.8 U	6.5 U	5.8 U	7.6 U	760 UD	5.6 U	56 UD	7.0 U	700 UD	6.2 U
Aroclor-1221	10,000	4.6 U	4.4 U	3.9 U	5.2 U	520 UD	3.8 U	38 UD	4.7 U	470 UD	4.2 U
Aroclor-1232	10,000	3.1 U	3.0 U	2.7 U	3.5 U	350 UD	2.6 U	26 UD	3.2 U	320 UD	2.8 U
Aroclor-1242	10,000	4.0 U	3.9 U	3.4 U	4.5 U	450 UD	3.3 U	33 UD	4.1 U	410 UD	3.7 U
Aroclor-1248	10,000	4.8 U	4.6 U	4.1 U	5.4 U	540 UD	3.9 U	39 UD	4.9 U	490 UD	4.3 U
Aroclor-1254	10,000	1.8 U	1.7 U	1.5 U	11000 EP	6000 DPJ	1000 EJ	390 DPJ	5700 EPJ	2400 DPJ	1.6 U
Aroclor-1260	10,000	3.8 U	3.7 U	60	4.3 U	430 UD	3.2 U	32 UD	3.9 U	390 UD	3.5 U
Units **COMPOUND**		**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**
Mercury	0.1	0.17 J	0.36 J	0.23 J	0.09 J	NA	0.01 J	NA	0.06 J	NA	0.22 J
Arsenic	7.5 or SB/(5.89)	6.810	7.500	10.7	35.5	NA	1.090 J	NA	15.5	NA	8.630
Barium	300 or SB/(52.5)	77.5	103	81.2	778	NA	10.1 J	NA	48.1	NA	325
Cadmium	1 or SB/(1.93)	3.090	2.330	4.350	21.7	NA	0.358 J	NA	3.880	NA	3.280
Chromium	10 or SB/(15.8)	14.4	9.830	33.7	1730	NA	4.170	NA	33.8	NA	54.3
Lead	SB/(87.9)	155	229	445	17200 D	NA	21.3	NA	104	NA	303
Selenium	2 or SB/(1.25)	1.220 J	0.857 J	1.310	9.180	NA	0.341 U	NA	2.480	NA	0.711 J
Silver	SB/(0.117)	0.385 J	0.133 U	0.640 J	40.6	NA	0.115 U	NA	1.090 J	NA	0.126 U

Qualifiers & Notes:

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P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 2. Subsurface Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard

PCBs and Metals Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	TP-20S-1 S3970-08 08/04/04 1.0 ug/Kg	TP-23S-1 S3970-09 08/04/04 1.0 ug/Kg	TP-24S-1 S3970-10 08/04/04 1.0 ug/Kg	TP-28S-1 S4063-01 08/08/04 1.0 ug/Kg	TP-30S-1 S4063-02 08/08/04 1.0 ug/Kg	TP-34S-1 S4063-03 08/08/04 1.0 ug/Kg	TP-35S-1 S4063-04 08/08/04 1.0 ug/Kg	TP-37S-1 S4063-05 08/06/04 1.0 ug/Kg	TP-38S-1 S4063-06 08/06/04 1.0 ug/Kg	TP-39S-1 S4063-07 08/06/04 1.0 ug/Kg	TP-41S-1 S4063-08 08/06/04 1.0 ug/Kg
Aroclor-1016	10,000	6.8 U	7.1 U	7.4 U	6.2 U	6.1 UJ	6.0 UJ	6.4 UJ	6.3 UJ	6.7 UJ	6.0 UJ	6.5 UJ
Aroclor-1221	10,000	4.7 U	4.8 U	5.1 U	4.2 U	4.2 UJ	4.1 UJ	4.4 UJ	4.3 UJ	4.5 UJ	4.1 UJ	4.5 UJ
Aroclor-1232	10,000	3.2 U	3.3 U	3.4 U	2.9 U	2.8 UJ	2.8 UJ	3.0 UJ	2.9 UJ	3.1 UJ	2.8 UJ	3.0 UJ
Aroclor-1242	10,000	4.1 U	4.2 U	4.4 U	3.7 U	3.6 UJ	3.6 UJ	3.8 UJ	3.7 UJ	4.0 UJ	3.6 UJ	3.9 UJ
Aroclor-1248	10,000	4.8 U	5.0 U	5.2 U	4.4 U	4.3 UJ	4.2 UJ	4.5 UJ	4.4 UJ	4.7 UJ	4.2 UJ	4.6 UJ
Aroclor-1254	10,000	1.8 U	97 P	1.9 U	1.6 U	1.6 UJ	1.6 UJ	1.7 UJ	1.6 UJ	1.7 UJ	1.6 UJ	1.7 UJ
Aroclor-1260	10,000	3.9 U	4.0 U	4.2 U	180 P	3.5 UJ	3.4 UJ	3.6 UJ	3.5 UJ	3.8 UJ	3.4 UJ	3.7 UJ
Units COMPOUND				mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Mercury	0.1	0.45 J	0.01 U	0.03 J	0.01	1.4	0.17	0.03	0.06	0.05	0.03	0.04
Arsenic	7.5 or SB/(5.89)	14.9	12.2	5.800	6.020	16.6	5.550	7.670	6.430	6.790	6.350	8.700
Barium	300 or SB/(52.5)	66.3	328	70.9	177	1900	147	33.8	52.7	59.2	50.5	45.7
Cadmium	1 or SB/(1.93)	13.5	3.020	2.330	0.684	7.220	1.760	1.260	0.652	1.030	0.733	1.370
Chromium	10 or SB/(15.8)	55.5	19.8	16.8	13.6	85.0	89.5	36.2	14.0	17.1	13.0	18.3
Lead	SB/(87.9)	199	137	16.4	244	2930	518	31.1	17.5	55.4	43.1	23.7
Selenium	2 or SB/(1.25)	3.450	2.040	0.916 J	1.920	2.250	1.240	1.690	1.010 J	0.564 J	0.831 J	2.070
Silver	SB/(0.117)	1.130 J	0.144 U	0.206 J	0.124 U	0.124 U	0.123 U	0.130 U	0.128 U	0.137 U	0.122 U	0.134 U

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

Table 3. Ground Water Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

Volatile Organics Sample ID Sampling Date Dilution Factor Units COMPOUND	TOGS 1.1.1 Standard or Guidance Value[1]	MW-1 S4507-01 09/01/04 1.0 ug/L	CHA-1 S4507-02 09/01/04 1.0 ug/L	CHA-2 S4507-03 09/01/04 1.0 ug/L	CHA-2 S5229-01 10/15/2004 1.0 ug/L	CHA-3 S4507-04 09/01/04 1.0 ug/L	CHA-4 S4507-07 09/01/04 1.0 ug/L	CHA-5 S4507-08 09/01/04 1.0 ug/L	CHA-6 S4507-09 09/01/04 1.0 ug/L	CHA-10 S4507-10 09/01/04 1.0 ug/L	TRIPBLANK S4507-11 09/01/04 1.0 ug/L
Chloromethane		0.68 U	0.68 U	0.68 U	NA	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U
Vinyl Chloride	2	0.27 U	0.27 U	0.27 U	NA	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
Bromomethane	5	0.78 U	0.78 U	0.78 U	NA	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U
Chloroethane	5	0.88 U	0.88 U	0.88 U	NA	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U
1,1-Dichloroethene	5	0.32 U	0.32 U	0.32 U	NA	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Acetone	50[2]	3.3 U	3.3 U	3.3 U	NA	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
Carbon Disulfide		0.39 U	0.39 U	0.39 U	NA	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
Methylene Chloride	5	0.62 U	0.62 U	0.62 U	NA	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U
trans-1,2-Dichloroethene	5	0.51 U	0.51 U	0.51 U	NA	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
1,1-Dichloroethane	5	0.22 U	0.22 U	0.22 U	NA	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
2-Butanone		2.8 U	2.8 U	2.8 U	NA	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U
Carbon Tetrachloride	5	0.47 U	0.47 U	0.47 U	NA	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U
cis-1,2-Dichloroethene	5	0.77 U	0.77 U	0.77 U	NA	0.77 U	49	0.77 U	0.77 U	0.77 U	0.77 U
Chloroform	7	0.58 U	0.58 U	0.58 U	NA	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
1,1,1-Trichloroethane	5	0.41 U	0.41 U	0.41 U	NA	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
Benzene	0.7	0.24 U	0.24 U	0.24 U	NA	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,2-Dichloroethane	0.6	0.32 U	0.32 U	0.32 U	NA	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Trichloroethene	5	0.67 U	5.0	0.67 U	NA	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
1,2-Dichloropropane	1	0.63 U	0.63 U	0.63 U	NA	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U
Bromodichloromethane	50[2]	0.35 U	0.35 U	0.35 U	NA	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
4-Methyl-2-Pentanone		1.3 U	1.3 U	1.3 U	NA	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Toluene	5	0.39 U	0.39 U	0.39 U	NA	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
t-1,3-Dichloropropene	0.4	0.42 U	0.42 U	0.42 U	NA	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
cis-1,3-Dichloropropene	0.4	0.15 U	0.15 U	0.15 U	NA	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,1,2-Trichloroethane	1	0.52 U	0.52 U	0.52 U	NA	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
2-Hexanone	50[2]	0.66 U	0.66 U	0.66 U	NA	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U
Dibromochloromethane	50[2]	0.38 U	0.38 U	0.38 U	NA	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
Tetrachloroethene	5	0.33 U	0.33 U	0.33 U	NA	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Chlorobenzene	5	0.37 U	0.37 U	0.37 U	NA	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
Ethyl Benzene	5	0.41 U	0.41 U	0.41 U	NA	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
m/p-Xylenes	5	0.96 U	0.96 U	0.96 U	NA	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U
o-Xylene	5	0.37 U	0.37 U	0.37 U	NA	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
Styrene	5	0.34 U	0.34 U	0.34 U	NA	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
Bromoform	50[2]	0.25 U	0.25 U	0.25 U	NA	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1,2,2-Tetrachloroethane	5	0.50 U	0.50 U	0.50 U	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Total Confident Conc. VOC		0	5	0		0	49	0	0	0	0
Total TICs		0	0	19		0	0	0	0	0	0

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

1. Shaded values exceed TOGS 1.1.1 Standard or Guidance Value for Class GA Groundwater.

2. Indicates value is a guidance value rather than a standard.

Table 3. Ground Water Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

Semivolatile Organics Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	TOGS 1.1.1 Standard or Guidance Value[1]	MW-1 S4507-01 09/01/04 1.0 ug/L	CHA-1 S4507-02 09/01/04 1.0 ug/L	CHA-2 S4507-03 09/01/04 1.0 ug/L	CHA-2 S5229-01 10/15/2004 1.0 ug/L	CHA-3 S4507-04 09/01/04 1.0 ug/L	CHA-4 S4507-07 09/01/04 1.0 ug/L	CHA-5 S4507-08 09/01/04 1.0 ug/L	CHA-6 S4507-09 09/01/04 1.0 ug/L	CHA-10 S4507-10 09/01/04 1.0 ug/L
bis(2-Chloroethyl)ether	1	0.330 U	0.330 U	0.330 U	NA	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U
1,2-Dichlorobenzene	3	0.590 U	0.590 U	0.590 U	NA	0.590 U	0.590 U	0.590 U	0.590 U	0.590 U
1,3-Dichlorobenzene	3	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	3	0.670 U	0.680 U	0.680 U	NA	0.670 U	0.670 U	0.680 U	0.670 U	0.670 U
2,2-oxybis(1-Chloropropane)		0.830 U	0.840 U	0.840 U	NA	0.830 U	0.830 U	0.840 U	0.830 U	0.830 U
N-Nitroso-di-n-propylamine		0.770 U	0.770 U	0.770 U	NA	0.770 U	0.770 U	0.770 U	0.770 U	0.770 U
Hexachloroethane	5	0.910 U	0.920 U	0.920 U	NA	0.910 U	0.910 U	0.920 U	0.910 U	0.910 U
Nitrobenzene	0.4	0.380 U	0.380 U	0.380 U	NA	0.380 U	0.380 U	0.380 U	0.380 U	0.380 U
Isophorone	50[2]	0.480 U	0.480 U	0.480 U	NA	0.480 U	0.480 U	0.480 U	0.480 U	0.480 U
bis(2-Chloroethoxy)methane	5	0.440 U	0.450 U	0.450 U	NA	0.440 U	0.440 U	0.450 U	0.440 U	0.440 U
1,2,4-Trichlorobenzene	5	0.410 U	0.410 U	0.410 U	NA	0.410 U	0.410 U	0.410 U	0.410 U	0.410 U
Naphthalene	10	0.270 U	0.270 U	1.5 J	NA	0.270 U	0.270 U	0.270 U	0.270 U	0.270 U
4-Chloroaniline	5	4.1 U	4.1 U	4.1 U	NA	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U
Hexachlorobutadiene	0.5	0.380 U	0.380 U	0.380 U	NA	0.380 U	0.380 U	0.380 U	0.380 U	0.380 U
2-Methylnaphthalene	50[2]	0.500 U	0.500 U	0.500 U	NA	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Hexachlorocyclopentadiene	5	0.450 U	0.460 U	0.460 U	NA	0.450 U	0.450 U	0.460 U	0.450 U	0.450 U
2-Chloronaphthalene	10[2]	0.390 U	0.390 U	0.390 U	NA	0.390 U	0.390 U	0.390 U	0.390 U	0.390 U
2-Nitroaniline	5	0.300 U	0.300 U	0.300 U	NA	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Dimethylphthalate	50[2]	0.260 U	0.260 U	0.260 U	NA	0.260 U	0.260 U	0.260 U	0.260 U	0.260 U
Acenaphthylene	20	0.430 U	0.440 U	0.440 U	NA	0.430 U	0.430 U	0.440 U	0.430 U	0.430 U
2,6-Dinitrotoluene	5	0.410 U	0.420 U	0.420 U	NA	0.410 U	0.410 U	0.420 U	0.410 U	0.410 U
3-Nitroaniline	5	1.0 U	1.1 U	1.1 U	NA	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U
Acenaphthene	20[2]	0.240 U	0.240 U	0.240 U	NA	0.240 U	0.240 U	0.240 U	2.6 J	0.240 U
Dibenzofuran		0.310 U	0.320 U	0.320 U	NA	0.310 U	0.310 U	0.320 U	0.310 U	0.310 U
2,4-Dinitrotoluene	5	0.340 U	0.340 U	0.340 U	NA	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
Diethylphthalate	50[2]	0.340 U	0.340 U	0.340 U	NA	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
4-Chlorophenyl-phenylether		0.360 U	0.370 U	0.370 U	NA	0.360 U	0.360 U	0.370 U	0.360 U	0.360 U
Fluorene	50[2]	0.170 U	0.170 U	0.170 U	NA	0.170 U	0.170 U	0.170 U	2.2 J	0.170 U
4-Nitroaniline	5	0.830 U	0.840 U	0.840 U	NA	0.830 U	0.830 U	0.840 U	0.830 U	0.830 U
N-Nitrosodiphenylamine	50[2]	0.280 U	0.280 U	0.280 U	NA	0.280 U	0.280 U	0.280 U	0.280 U	0.280 U
4-Bromophenyl-phenylether		0.170 U	0.170 U	0.170 U	NA	0.170 U	0.170 U	0.170 U	0.170 U	0.170 U
Hexachlorobenzene	0.04	0.230 U	0.230 U	0.230 U	NA	0.230 U	0.230 U	0.230 U	0.230 U	0.230 U
Phenanthrene	50[2]	0.270 U	0.280 U	0.280 U	NA	0.270 U	0.270 U	0.280 U	1.1 J	0.270 U
Anthracene	50[2]	0.160 U	0.160 U	0.160 U	NA	0.160 U	0.160 U	0.160 U	0.160 U	0.160 U
Carbazole		0.310 U	0.310 U	0.310 U	NA	0.310 U	0.310 U	0.310 U	0.310 U	0.310 U
Di-n-butylphthalate	50[2]	0.098 U	0.099 U	0.099 U	NA	3.9 J	0.098 U	0.099 U	0.098 U	0.098 U
Fluoranthene	50[2]	0.210 U	0.210 U	0.210 U	NA	0.210 U	0.210 U	0.210 U	0.210 U	0.210 U
Pyrene	50[2]	0.250 U	0.250 U	0.250 U	NA	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Butylbenzylphthalate	50[2]	0.300 U	0.300 U	0.300 U	NA	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
3,3-Dichlorobenzidine	5	1.6 U	1.6 U	1.6 U	NA	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Benzo(a)anthracene	0.002[2]	0.220 U	0.230 U	0.230 U	NA	0.220 U	0.220 U	0.230 U	0.220 U	0.220 U
Chrysene	0.002[2]	0.380 U	0.390 U	0.390 U	NA	0.380 U	0.380 U	0.390 U	0.380 U	0.380 U
bis(2-Ethylhexyl)phthalate	5	0.340 U	0.350 U	1.7 J	NA	0.340 U	0.340 U	1.2 J	1.8 J	0.340 U
Di-n-octyl phthalate	50[2]	0.170 U	0.170 U	0.170 U	NA	0.170 U	0.170 U	0.170 U	0.170 U	0.170 U
Benzo(b)fluoranthene	0.002[2]	0.230 U	0.230 U	0.230 U	NA	0.230 U	0.230 U	0.230 U	0.230 U	0.230 U
Benzo(k)fluoranthene	0.002[2]	0.380 U	0.390 U	0.390 U	NA	0.380 U	0.380 U	0.390 U	0.380 U	0.380 U
Benzo(a)pyrene	ND	0.450 U	0.450 U	0.450 U	NA	0.450 U	0.450 U	0.450 U	0.450 U	0.450 U
Indeno(1,2,3-cd)pyrene	0.002[2]	0.290 U	0.290 U	0.290 U	NA	0.290 U	0.290 U	0.290 U	0.290 U	0.290 U
Dibenz(a,h)anthracene	50	0.290 U	0.290 U	0.290 U	NA	0.290 U	0.290 U	0.290 U	0.290 U	0.290 U
Benzo(g,h,i)perylene		0.420 U	0.430 U	0.430 U	NA	0.420 U	0.420 U	0.430 U	0.420 U	0.420 U
Total Confident Conc. SVOC		0	0	3.2		3.9	0	1.2	7.7	0
Total TICs		6.6	6.2	131		8	6.6	24.1	311	7.4

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

1. Shaded values exceed TOGS 1.1.1 Standard or Guidance Value for Class GA Groundwater.

2. Indicates value is a guidance value rather than a standard.

Table 3. Ground Water Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard
Poughkeepsie, New York

Sample ID		MW-1	CHA-1	CHA-2	CHA-2	CHA-3	CHA-4	CHA-5	CHA-6	CHA-10
		S4507-01	S4507-02	S4507-03	S5229-01	S4507-04	S4507-07	S4507-08	S4507-09	S4507-10
Sampling Date	TOGS 1.1.1	9/1/04	9/1/04	9/1/04	10/15/2004	9/1/04	9/1/04	9/1/04	9/1/04	9/1/04
Dilution Factor	Standard or	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units	Guidance	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
COMPOUND	Value[1]									
Aroclor-1016	0.09	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U
Aroclor-1221	0.09	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Aroclor-1232	0.09	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Aroclor-1242	0.09	0.140 U	0.140 U	0.140 U	0.140 U	0.140 U	0.140 U	0.140 U	0.140 U	0.140 U
Aroclor-1248	0.09	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U	0.060 U
Aroclor-1254	0.09	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U
Aroclor-1260	0.09	0.0630 U	0.0620 U	4.7 P	0.31 J	0.0640 U	0.0620 U	0.0640 U	0.0620 U	0.0630 U
Units		ug/L	ug/L	ug/L		ug/L	ug/L	ug/L	ug/L	ug/L
COMPOUND										
Arsenic	25	4.8 U	4.8 U	4.8 U	NA	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U
Barium	1,000	67.3 J	78.8 J	204	NA	16.1 J	117 J	46.8 J	81.4 J	80.1 J
Cadmium	5	0.99 U	0.99 U	0.99 U	NA	0.99 U	0.99 U	0.99 U	0.99 U	0.99 U
Chromium	50	1.2 U	2.7 J	1.2 U	NA	3.1 J	2.4 J	1.8 J	1.2 U	1.2 U
Lead	25	1.8 U	22.2	1.8 U	NA	21.0	1.8 U	39.2	1.8 U	1.8 U
Selenium	10	5.2 U	5.2 U	5.2 U	NA	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U
Silver	50	3.4 U	3.4 U	3.4 U	NA	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U
Mercury	0.7	0.06 J	0.03 J	0.03 U	NA	0.04 J	0.03 U	0.08 J	0.04 J	0.03 U

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

1. Shaded values exceed TOGS 1.1.1 Standard or Guidance Value for Class GA Groundwater.

2. Indicates value is a guidance value rather than a standard.

Table 2. Subsurface Soil Sample Laboratory Results Summary
DeLaval Property
Pine Street and Rinaldi Boulevard

PCBs and Metals Sample ID Laboratory Sample No. Sampling Date Dilution Factor Units COMPOUND	NYSDEC Recommended Soil Cleanup Objective Concentration[1]	TP-42S-1 S4063-09 08/06/04 1.0 ug/Kg	AT-7S-1 S3897-01 07/29/04 1.0 ug/Kg	B-7(14-16) S4313-01 8/18/04 1.0 ug/Kg
Aroclor-1016	10,000	6.4 UJ	6.0 U	6.2 U
Aroclor-1221	10,000	4.4 UJ	4.1 U	4.2 U
Aroclor-1232	10,000	3.0 UJ	2.8 U	2.8 U
Aroclor-1242	10,000	3.8 UJ	3.6 U	3.7 U
Aroclor-1248	10,000	4.5 UJ	4.2 U	4.3 U
Aroclor-1254	10,000	1.7 UJ	1.6 U	1.6 U
Aroclor-1260	10,000	3.6 UJ	3.4 U	340
Units **COMPOUND**		**mg/Kg**	**mg/Kg**	**mg/Kg**
Mercury	0.1	0.01 U	0.01 UJ	0.01 U
Arsenic	7.5 or SB/(5.89)	8.140	18.8	0.306 J
Barium	300 or SB/(52.5)	126	75.7	11.4 J
Cadmium	1 or SB/(1.93)	0.712	2.280	0.307 J
Chromium	10 or SB/(15.8)	8.880	29.2	5.840 J
Lead	SB/(87.9)	71.1	119	26.8
Selenium	2 or SB/(1.25)	1.020 J	2.690	1.200 J
Silver	SB/(0.117)	0.127 U	0.777 J	0.125 U

Qualifiers & Notes:

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit, but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Value exceeds calibration range.

D - Compound identified in analysis at a secondary dilution factor.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NA-not analyzed

MDL - Method Detection Limit

** - As per TAGM #4046, Total VOCs<10ppm., Total Semi-VOCs<500ppm., and Individual Semi-VOCs<50ppm.

1. Shaded values exceed TAGM 4046 Recommended Cleanup Objectives for Subsurface Soil.

BIDDERS QUALIFICATION QUESTIONNAIRE

The undersigned guarantees the accuracy of all statements and answers herein contained. (Please print in ink).

1. How many years has your firm been in business as a Contractor?

_____ years

2. List projects of this nature that you have completed in the last three (3) years, and give the name, address and telephone number of a reference from each. Also give the completion date, the original contract bid price and the completed cost of each project listed (use additional sheet, if necessary).

3. List projects presently under construction by your firm the dollar volume of the contract and the percentage completion of the contract.

4. Have you ever failed to complete work awarded to you; if so, state where and why.

5. What equipment do you own that is available for this work?

6. What equipment do you plan to rent or purchase for this work?

7. Have you ever performed work under the direction of a Professional Engineer or Registered Architect? If so, list up to three (3) such firms giving the name of the firm, its address, telephone number and the name of the project. (List most recent projects).

_____

_____

_____

_____

_____

8. Give the name, address and telephone number of an individual who represents each of the following and whom the Owner may contact to investigate your financial responsibility: a surety, a bank, and a major material supplier.

_____

_____

_____

_____

_____

9. Provide a financial statement for your company. This should include a balance and income statement for your most recent fiscal year. A certified audit is preferred but not required. Use an insert sheet, if needed. Only three (3) lowest bidders shall submit this information (if requested by Owner) to the Owner within forty-eight (48) hours of the opening of the Bids.

_____

_____

_____

_____

_____

10. State the true, exact, correct and complete name of the partnership, corporation or trade name under which you do business, and the address of the place of business. (If a corporation, state the name of all partners. If a trade name, state the names of the individuals who do business under the trade name.) It is absolutely necessary that information be furnished.

_____
Correct Name of Bidder

a. The business is a _____
(Type of Legal Entity)

b. The address of principal place of business is:

_____

_____

_____

c. The names of the corporate officers, or partners, or individuals doing business under a trade name, are as follows:

_____

_____

_____

_____

_____

_____

Bidder

BID FORM

PROJECT IDENTIFICATION: The DeLaval Property – Environmental Restoration Project

CONTRACT IDENTIFICATION AND NUMBER: 09-06-27

THIS BID IS SUBMITTED TO:
(Name and Address of Owner) The City of Poughkeepsie
62 Civic Center Plaza - P.O. Box 300
Poughkeepsie, New York 12602-0300

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid Price and within the Bid Times indicted in this Bid and in accordance with the other terms and conditions of the Contract Documents.

2. BIDDER accepts all of the terms and conditions of the Advertisement or Notice to Bidders and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for forty-five (45) days after the day of Bid opening. BIDDER will sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen days after the date of OWNER's Notice of Award.

3. In submitting this Bid, BIDDER represents as more fully set forth in the Agreement, that:

   a. BIDDER has examined and carefully studied the Bidding Documents and the following Addenda receipt of all which is hereby acknowledged: (List Addenda by Addendum Number and Date)

   _____

   _____

   _____

   _____

   _____

   _____

   b. BIDDER has visited the site and become familiar with and is satisfied as to the general, local, and site conditions that may affect cost, progress, performance, and furnishing of the Work.

   c. BIDDER is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance, and furnishing of the Work.

d. BIDDER has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except underground facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.2.1 of the General Conditions. BIDDER accepts the determination set forth in paragraph SC-4.2 of the Supplementary Conditions of the extent of the "technical data" contained in such reports and drawings upon which BIDDER is entitled to rely as provided in paragraph 4.2 of the General Conditions. BIDDER acknowledges that such reports and drawings are not Contract Documents and may not be complete for BIDDER's purposes. BIDDER acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of information and data shown or indicted in the Bidding Documents with respect to underground facilities at or contiguous to the site. BIDDER has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the site or otherwise which may affect cost progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by BIDDER and safety precautions and programs incident thereto. BIDDER does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the times, price, and other terms and conditions of the Contract Documents.

e. BIDDER is aware of the general nature of Work to be performed by OWNER and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.

f. BIDDER has correlated the information known to BIDDER, information and observation obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

g. BIDDER has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that BIDDER has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.

h. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; BIDDER has not directly or indirectly induced or solicited any other BIDDER to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other BIDDER or over OWNER.

i. BIDDER understands that no cost escalation is permitted within the Contract Documents.

4. BIDDER will complete the Work in accordance with the Contract Documents for the following price(s):

** Complete Summary Table on Following Pages **

Alternative A (add)(deduct) _____ ($ _____)
Alternative B (add)(deduct) _____ ($ _____)

TOTAL BID FOR ALL UNIT PRICES _____ ($ _____)
(use words) (figures)

UNIT PRICE BID
BID SUMMARY FORM

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
1	1	Mobilization/Demobilization For: _____ _____ Per Lump Sum				
2	1	Health & Safety For: _____ _____ Per Lump Sum				
3	1	Construction of Decontamination Pad For: _____ _____ Per Lump Sum				
4	1	Stabilized Construction Entrance For: _____ _____ Per Lump Sum				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
5	4,200	Silt Fence For: _____ _____ Per Linear Foot				
6	1,000	Install & Relocate Turbidity Curtain For: _____ _____ Per Linear Foot				
7	2	Temporary Chain Link Fence Gate For: _____ _____ Per Each				
8	165	Temporary Chain Link Fence For: _____ _____ Per Linear Foot				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
9	28	Waste Characterization Soil Samples For: _____ _____ Per Each				
10	1	Removal of Existing Swing Gate For: _____ _____ Per Lump Sum				
11	1	Removal Flag Pole & Metal Antenna For: _____ _____ Per Lump Sum				
12	1	Remove Utility Poles & Associated Equipment For: _____ _____ Per Lump Sum				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
13	1	Salvage Monument For: _____ _____ Per Lump Sum				
14	1,900	Remove & Recycle Concrete For: _____ _____ Per Cubic Yard				
15	12.5	Clearing & Grubbing For: _____ _____ Per Acre				
16	1	Clearing Rock Outcropping For: _____ _____ Per Lump Sum				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
17	15	Protection of Tree Root Systems For: _____ _____ Per Each				
18	7	Monitoring Well Abandonment For: _____ _____ Per Each				
19	155	2" Waterline Removal For: _____ _____ Per Linear Foot				
20	1	4" Pipe Outfall Abandonment For: _____ _____ Per Each				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
21	4	8" and 12" Pipe Outfall/Intake Abandonment For: _____ _____ Per Each				
22	1	Excavate & Remove 6" Fuel Oil Pipeline For: _____ _____ Per Lump Sum				
23	1	Excavate, Clean, Remove & Dispose UST For: _____ _____ Per Lump Sum				
24	10,000	Excavate Soil & Stockpile for Reuse For: _____ _____ Per Cubic Yard				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
25	35,500	Excavate Grossly-Contaminated Soils for Off-Site Disposal For: _____ _____ Per Ton				
26	24	Confirmatory Soil Samples For: _____ _____ Per Each				
27	12,400	Place & Compact On-Site Soils & Recycled Concrete For: _____ _____ Per Cubic Yard				
28	18,000	Place & Compact Imported Clean Fill For: _____ _____ Per Cubic Yard				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
29	5	Install 24" HDPE Pipe & Outfall For: _____ _____ Per Each				
30	1	Install 36" HDPE Pipe & Outfall For: _____ _____ Per Each				
31	12	Weep Hole Extensions For: _____ _____ Per Each				
32	586	Install 8" PVC Pipe For: _____ _____ Per Linear Foot				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
33	5	Install Precast Concrete Manholes For: _____ _____ Per Each				
34	2	Connect 8" PVC Pipe to Existing Manhole For: _____ _____ Per Each				
35	53,500	Site Grading For: _____ _____ Per Square Yard				
36	53,500	Install Demarcation Barrier For: _____ _____ Per Square Yard				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
37	17,800	Install Barrier Protection Soil Cover Layer For: _____ _____ Per Cubic Yard				
38	11	Mulch Barrier Protection Soil Layer For: _____ _____ Per Acre				
39	25,000	Dewatering & Groundwater Management For: _____ _____ Per Gallon				
40	1,000	Free Product Removal & Disposal For: _____ _____ Per Gallon				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
41	403	Anchored Steel Sheet Pile Bulkhead (SSP) For: _____ _____ Per Linear Feet				
42	744	Cantilever Steel Sheet Pile Bulkhead (SSP) For: _____ _____ Per Lineal Feet				
43	1,147	SSP Interlock Waterstop For: _____ _____ Per Linear Feet				
44	199	SSP Toe Pins For: _____ _____ Per Each				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
45	1,300	Riprap Toe Protection For: _____ _____ Per Cubic Yard				
46	7,500	Riprap Revetment For: _____ _____ Per Cubic Yard				
47	10	Outfall Extension Pipe for Existing Pipes For: _____ _____ Per Each				
48	1	Live Stakes For: _____ _____ Per Lump Sum				

ITEM NUMBER	ESTIMATE OF QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE BID		AMOUNT OF BID	
			DOLLARS	CENTS	DOLLARS	CENTS
49	1	Allowance 1: Additional Soil & Groundwater Sampling For: Five-thousand dollars and no cents _____ Per Allowance	$5,000	00	$5,000	00
50	11	Alternate 1: Topsoil & Seeding For: _____ _____ Per Acre				
		SUBTOTAL	$ _____			
		PLEASE MAKE SURE A BID IS ENTERED FOR EACH ITEM. TOTAL OR GROSS SUM WRITTEN IN WORDS: _____	$ _____			

NOTE: In the event that there are discrepancies within the Bid Schedule, the values written in words will be the accepted quantity.

Unit Prices have been computed in accordance with paragraph 11.9.2 of the General Conditions.

BIDDER acknowledges that quantities are not guaranteed and final payment will be based on actual quantities determined as provided in the Contract Documents.

BIDDER agrees that the Work will be substantially complete on or before July 25, 2008 and completed and ready for final payment in accordance with paragraph 14.13 of the General Conditions on or before August 29, 2008.

BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement.

5. The following documents are attached to and made a condition of this Bid:

   a. The completed Bid Form, including acknowledgement of receipt of all addendums.

   b. The completed Bid Summary Form with all pricing filled out.

   c. Required Bid Security in the form of certified check or bid bond.

   d. Required BIDDER's Qualification Statement with supporting data.

   e. Certified Copy of Resolution of Board of Directors.

   f. Non-Collusion Form.

   g. A tabulation of Subcontractors, Suppliers, and other persons and organizations to be utilized for this project shall be identified in the Bid.

6. Communications concerning this Bid shall be addressed to:

   Provide the address and appropriate phone numbers of the BIDDER below.

   _____

   _____

   _____

   _____

   Phone: _____

   Fax: _____

7. Terms used in this Bid which are defined in the General Conditions or Instructions will have the meanings indicated in the General Conditions or Instructions.

   SUBMITTED on _____, 2007.

   State Contractor License No. _____

If BIDDER is:

An Individual

By _____(SEAL)

(Individual's Name)

doing business as _____

Business address: _____

_____

Phone No.: _____

A Partnership

By _____(SEAL)

(Firm Name)

_____

(general partner)

Business address: _____

_____

Phone No.: _____

A Corporation

By _____(SEAL)

(Corporation Name)

_____

(state of incorporation)

By _____(SEAL)

(name of person authorized to sign)

_____

(Title)

(Corporate Seal)

Attest _____

(Secretary)

Business address: _____

_____

Phone No.: _____

Date of Qualification to do business is _____

A Joint Venture

By _____(SEAL)

(Name)

_____

(Address)

By _____(SEAL)

(Name)

_____

(Address)

Phone Number and Address for receipt of official communications

_____

_____

(Each joint venturer must sign. the manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above).

CERTIFIED COPY OF RESOLUTION OF
BOARD OF DIRECTORS OF

_____
(NAME OF CORPORATION)

"RESOLVED that _____, _____
(Person Authorized to Sign) (Title)

of _____ authorized to sign and submit the Bid of this corporation for
(NAME OF CORPORATION)

the following Project:

_____

and to include in such bid the certificate as to non-collusion, and for any inaccuracies or misstatements in such certificate this corporate Bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by

_____
(NAME OF CORPORATION)

at a meeting of its Board of Directors held on the _____ day of _____ 20_____.

By _____

Title _____

(SEAL)

The above form must be completed if the Bidder is a Corporation.

NON-COLLUSION FORM

GENERAL MUNICIPAL LAW
CHAPTER 675

Amending 103-d - General Municipal Law

"(a) 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 his 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 which have been 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."

_____
FIRM

_____
BY

_____
DATE

CONTRACT NO.(S)_____

CONTRACT NAME(S)_____

BID BOND

BIDDER *(Name and Address)*:

_____
_____
_____

SURETY *(Name and Address of Principal Place of Business)*:

_____
_____
_____

OWNER *(Name and Address)*:

_____
_____
_____

BID

BID DUE DATE: _____
PROJECT *(Brief Description Including Location)*:

_____
_____
_____

BOND

BOND NUMBER: _____
DATE: *(Not later than Bid Due Date)*: _____
PENAL SUM: _____

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER	SURETY
_____(Seal)	_____(Seal)
(Bidder's Name and Corporate Seal)	Surety's Name and Corporate Seal
By:_____	By:_____
Signature and Title	Signature and Title (Attach Power of Attorney)
Attest:_____	Attest:_____
Signature and Title	Signature and Title

Note: (1) Above addresses are to used for giving required notice.
(2) Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to OWNER upon default of Bidder the penal sum set forth on the face of this Bond.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents and Contract Documents.

3. This obligation shall be null and void if:

   3.1 OWNER accepts Bidder's bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents and Contract Documents, or

   3.2 All bids are rejected by OWNER, or

   3.3 OWNER fails to issue a notice of award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from OWNER, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue notice of award agreed to in writing by OWNER and Bidder, provided that the time for issuing notice of award including extensions shall not in the aggregate exceed 120 days from Bid Due Date without Surety's written consent.

6. No suit or action shall commence under this Bond prior to 30 calendar days after the notice of default required in paragraph 4 above is received by Bidder and Surety, and in no case later than one year after Bid Due Date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notice required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. such notices may be sent by personal deliver, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted form this Bond shall be deemed to be included herein as if set forth at length. If any provision of any Bond conflicts with any applicable provision of any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "bid" as used herein includes a bid, offer, or proposal as applicable.

AFFIDAVIT - WORKER'S COMPENSATION

State of _____

SS:

County of _____

_____

of _____

being duly sworn, deposes and says that he now carries or that he has applied for a Worker's Compensation Policy to cover the operations, as set forth in the preceding contract, and to comply with the provisions thereof.

Signed: _____

Subscribed and sworn to before me

this _____ day of _____, 20____.

_____

Notary Public

AGREEMENT

This AGREEMENT, made this _____ day of _____, 2007, by THE CITY OF POUGHKEEPSIE, NEW YORK, a municipal corporation created and organized under the laws of the State of New York with offices at 62 Civic Center Plaza, Poughkeepsie, New York 12602, hereinafter referred to as the Owner, and _____a with offices at: _____ _____ hereinafter referred to as the Contractor,

WHEREAS, the Owner is desirous of having certain work undertaken as more specifically detailed in the annexed bid documents, entitled ____ The DeLaval Property – Environmental Restoration Program Project _, which is incorporated herein as Schedule A;

WHEREAS, the funds for such work have been duly appropriated by the Common Council of the City of Poughkeepsie and appear in the budget for the Fiscal Year _____ at line item _____;

WHEREAS, the Contractor herein has duly submitted a bid for the work of Bid Number _____ to the Owner and the same has been found to be the lowest responsible bidder;

WITNESSETH, that upon the consideration, mutual covenants and agreements contained herein, the parties hereto do mutually agree as follows:

ARTICLE 1 STATEMENT OF WORK

The Contractor shall furnish all labor, materials, tools, equipment, supervision, and incidentals required for the DeLaval Property – Environmental Restoration Program Project in strict compliance with the specifications, schedules, plans and drawings, annexed hereto in Schedule A. The Work generally consists of, but is not limited to establishing site controls, installing stormwater pollution prevention devices, clearing and grubbing the site, removal and delivery of utility poles and associated electrical equipment on the project site to the owner, removal of an existing stone monument and delivery to the Owner, abandonment of three small pipelines, installation of two bulkheads along the riverfront, installation of rip-rap revetment to provide shoreline protection in non-bulkhead zones, excavation and off-site disposal of contaminated soils, backfilling the excavated areas with on-site materials and imported clean fill, temporary management of impacted groundwater, the removal of an underground storage tank and six-inch pipeline containing groundwater and/or weathered petroleum product, site grading, installation of geotextile demarcation barrier across the site, placing and compacting soils, abandonment of monitoring wells, and performing quality assurance/quality control (QA/QC) testing and other related work. An alternate for the project includes the placement of topsoil on the property and the establishment of vegetation via seeding and mulching the site.

After the excavation activities within the Areas of Concern, as shown on the Drawings, are complete, the Contractor will be required to provide the future Developer of the project site access to the site for a period of forty-five (45) in which the Developer will strip the remaining topsoil from the site, complete rough grading activities, complete the installation of subsurface utilities, and use acceptable soil excavated from the site as backfill material within the Areas of Concern.

ARTICLE 2 COSTS

This project is being completed through the New York State Department of Environmental Conservation's (NYSDEC's) Environmental Restoration Program (ERP). The Work is funded in part with State money; however, the State will not be party to the awarded contract.

Pursuant to the Contractor's bid proposal the Owner agrees to pay the Contractor for the work performed pursuant to this contract an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated on the Bid Form. Based on these quantities, the total initial contract price is:

TOTAL OF ALL
UNIT PRICES _____ $_____ (dollars)
(Use words)

As provided in paragraph 11.9 of the General Conditions estimated quantities are not guaranteed, and determinations of actual quantities and classification are to be made by ENGINEER as provided in paragraph 9.10 of the General Conditions. Unit prices have been computed as provided in paragraph 11.9.2 of the General Conditions. The schedule of said payments will be made pursuant to the terms contained herein.

ARTICLE 3 COMMENCEMENT OF WORK

The Contractor agrees to commence work on the __ day of_____, 2007 with said work to be substantially completed by the 25th day of July, 2008. The work shall be fully and satisfactorily completed and ready for final payment in accordance with Paragraph 14.13 of the General Conditions on or before the 29th day of August, 2008.

ARTICLE 4 BONDS

The Contractor shall furnish a performance bond in the sum of _____ _____ Dollars, ($_____), and a payment bond in the sum of _____ _____ Dollars, ($_____), both bonds subject to the acceptance and approval of the Owner. The failure to obtain such bonds shall render this contract voidable at the option of the Owner.

ARTICLE 5 DEFINITIONS

All terms shall be as defined in the Contract Documents, attached as Schedule A.

ARTICLE 6 OWNER AND CONTRACTOR'S REPRESENTATIVE

a) The work will completed be under the general direction of the Owner, who shall designate a representative hereinafter referred to as the Engineer who shall, under the direction of the Owner, have complete charge of the work and shall exercise full supervision and direction of the work so far as it affects the interest of the Owner. The undertaking of the general direction of work by the Owner does not create any responsibility on behalf of the Owner to insure completion of work nor does it alleviate the full and complete responsibility of the Contractor for all work.

b) The Contractor shall designate a representative satisfactory to the Owner who shall be present at the site of the work at all times, and who shall have authority to act for the Contractor in all matters pertaining to the work.

ARTICLE 7 PERFORMANCE OF WORK

a) Workmanship - Material - Workmen. Unless otherwise specifically provided for in the Specifications, all workmanship, equipment, materials and articles incorporated in the work covered by this Contract are to be of the most suitable grade of their respective kinds for the purpose. Where equipment, materials or articles are referred to in the Specifications as "equal to" any particular standard, the Engineer shall decide the question of equality. The Contractor shall furnish to the Engineer for his approval the name of the manufacturer of machinery, mechanical and other equipment which he contemplates incorporating in the work, together with their performance capacities, and such other information as may be pertinent or required by the Engineer. When, and to the extent required by the Specifications or by the Engineer, the Contractor shall furnish for approval by the Engineer full information concerning the materials or articles which he contemplates incorporating in the work.

Samples of materials shall be submitted for approval when so directed. Machinery, equipment, materials, and articles installed or used without such approval shall be at the risk of the subsequent rejection. The Engineer may require the Contractor to remove from the work such employees as the Engineer deems incompetent, careless, insubordinate, or otherwise objectionable or whose continued employment on the work is deemed by the Engineer to be contrary to the public interest.

b) Changed Conditions. Information respecting the site of the work given in drawings or Specifications has been obtained by the Owner's representatives and is believed to be reasonably correct, but the Owner does not warrant either the completeness or accuracy of such information, and it is the responsibility of the contractor to verify all such information, provided that, in case of subsurface, latent or unknown conditions, this contract may be modified, in the manner, and to the extent hereinafter provided in this subparagraph. Should the Contractor encounter, or the Owner discover, during the progress of work, subsurface or latent conditions at the site materially differing from those shown on the drawings or indicated in the Specifications, or unknown conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as being inherent in work of the character provided for in the drawings and Specifications, the Engineer shall be notified before the existing conditions are disturbed. The Engineer shall thereupon investigate the conditions, and if they find they do so materially differ, the Contract shall be modified by the Owner providing for any increase or decrease in cost and difference in time resulting from such conditions, and an equitable adjustment in the pertinent contract terms shall be made in accordance with the provisions of the paragraphs of Article 13 hereof. Such Specification by the Owner shall be final, subject only to appeal under the provisions of Article 21.

c) License and Permits. The Contractor shall, without additional expense to the Owner, obtain all required licenses and permits.

d) Responsibility of Contractor. The Contract shall be responsible for all damages to persons or property that occur as a result of his fault or negligence in connection with the prosecution of the work, and shall be responsible for all materials delivered (including Owner furnished material and equipment delivered to the Contractor unless otherwise specifically provided) and work performed until completion and final acceptance. Upon completion of the Contract the work shall be delivered complete and undamaged.

e) Space at Site. The Contractor shall be allowed reasonable space (to the extent practical) at the site of the work and access thereto, and shall confine his operations to the space assigned. The work shall be done without interference with the ordinary use of streets and passages and the Contractor shall cooperate with other contractors of the Owner and Owner employees as may be required by the circumstances or directed by the Engineer. The Contractor shall not commit or permit any act which will interfere with the performance of work by any other contractor or Owner employees whether at the site or not.

f) Protective Measures. The Contractor shall protect the materials and work from deterioration and damage during construction, and shall store and secure flammable material from fire, and during cold weather shall furnish all heat necessary for proper conduct of work. He shall provide for safety and traffic.

g) Safety Measure. The Contractor shall take all reasonable steps to prevent injury to persons or property in performance of this Contract, and the Contractor shall take such other further steps as may be required by the Engineer to the end of promoting safety and avoiding accidents.

h) Temporary Buildings. The Contractor shall erect at his own expense, and remove at the completion of the work, such temporary storage sheds and offices as are necessary for the work. Such structures shall be subject to the approval of the Engineer.

i) Notification of Utility Companies. The Penal Laws of New York State Section 1918, Chapter 731 of April 4, 1953, requires all Contractors making excavations or blasting adjacent to gas lines to notify the appropriate utility company in advance of such work.

The Contractor shall give written notice to the Central Hudson Gas and Electric Corporation and the New York Telephone Company before work of any nature is commenced under this contract, and shall give additional notification of any proposed blasting at least forty-eight (48) hours in advance.

j) The Owner, Engineer, and the New York State Department of Environmental Conservation shall have unrestricted access for observation and inspection of the site and work completed at all times.

ARTICLE 8 SPECIFICATIONS AND DRAWINGS

a) Representations. The Contractor shall make the following representations by entering into this Agreement with the Owner:

- Contractor has examined and carefully studied the Contract Documents (including all Addenda) and the other related data identified in the Bidding Documents including "technical data."

- Contractor has visited the site and become familiar with and is satisfied as to the general, local, and site conditions that may affect cost, progress, performance or furnishing of the Work.

- Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

- Contractor has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.2.1 of the General Conditions. Contractor accepts the determination set forth in paragraph SC-4.2 of the Supplementary Conditions of the extent of the "technical data" contained in such reports and drawings upon which Contractor is entitled to rely as provided in paragraph 4.2 of the General Conditions. Contractor acknowledges that such reports and drawings are not Contract Documents and may not be complete for Contractor's purposes. Contractor acknowledges that Owner and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents with respect to Underground Facilities at or contiguous to the site. Contractor has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor and safety precautions, and programs incident thereto. Contractor does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.

- Contractor is aware of the general nature of work to be performed by Owner and others at the site that relates to the Work as indicated in the Contract Documents.

- Contractor has correlated the information known to Contractor, information and observation obtained from visits to the site, reports, and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

- Contractor has given Engineer written notice of all conflicts, errors, ambiguities or discrepancies that Contractor has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to Contractor, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

b) Conflicts - Omissions - Misdescription - Misinformation. The Contractor shall keep on the work a copy of the drawings and specifications and the Engineer shall at all times have access thereto. Anything mentioned on the specifications and not shown on the drawings or shown on the drawings not mentioned in the specifications shall be of like effect as if shown or mentioned in both. In case of difference between the drawings and specifications, the specifications shall govern. Omissions from the drawings or specifications, or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of work, but they shall be performed as if fully and correctly set forth and described in the drawings and specifications.

c) Checking of Drawings and Dimensions. The Contractor shall check all drawings furnished him (including Addenda) immediately upon their receipt and shall promptly notify the Engineer of any discrepancies. Figures marked on drawings shall in general be followed in preference to scale measurements. Large scale drawings shall in general govern small to scale drawings. The Contractor shall prepare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby. When measurements are affected by conditions already established, the Contractor shall take measurements notwithstanding the giving of scale or figure dimensions in the drawings.

d) Deviations. Deviations from drawings and the dimensions therein given, whether or not an error is believed to exist, shall be made only after authority is obtained from the Engineer.

e) Lines and Grades. The Contractor shall furnish all lines, grades, stakes, templates and bench marks necessary for marking and maintaining points, lines and elevations. The Contractor shall be responsible for the agreement of the finished work with the lines and grades identified by the Engineer on the Contract Drawings.

f) Interpretations and Instructions. All questions regarding the figures, drawings, plans and specifications and the interpretations thereof, and the resolving of conflicts and inconsistencies therein, shall be determined by the Engineer, and such determination shall be final subject only to appeal under the provisions of Article 21.

ARTICLE 9 PAYMENT AND RELEASE

a) The Contractor shall submit Application for Payment in accordance with Article 14 of the General Conditions.

b) The Contractor shall be entitled to partial payments hereunder as the work progresses upon the basis of the Contractor's Applications for Payment and estimates made by the Engineer. In making such estimates, materials delivered to the site, work done at the Contractor's assembly plant, and preparatory work done by the Contractor may be taken into consideration. The making of such payments shall not be a waiver by the Owner in regard to any defects concerning same, nor shall the Contractor's responsibility for the work sites and all materials thereon be diminished by such payment. All such payments will be measured by the schedule of values established in paragraph 2.9 of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

c) Prior to Substantial Completion, payments will be made as set forth below, but, in each instance, less the aggregate of payment previously made and less such amounts ENGINEER shall determine, or OWNER may withhold in accordance with paragraph 14.7 of the General Conditions.

Five Percent (5 %) of Work completed (with the balance being retainage)

Five Percent (5%) (with the balance being retainage) of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to OWNER as provided in paragraph 14.2 of the General Conditions).

When the Work has reached Substantial Completion, CONTRACTOR shall submit to the ENGINEER an Application for Payment of the remaining amount of the contract balance. Upon receipt of such Application for Payment, the OWNER shall approve and promptly pay the remaining amounts of the contract balance less two times the value of any remaining items to be completed and an amount necessary to satisfy any claims, liens or judgment against the CONTRACTOR which have not been suitably discharged. As the remaining items of Work are satisfactorily completed or corrected, OWNER shall promptly pay, upon receipt of an Application for Payment, for these items less an amount necessary to satisfy any claims, liens or judgments against the CONTRACTOR which have not been suitably discharged. Where the OWNER is other that the City of New York, the term "promptly pay" shall mean payment within thirty days, excluding legal holidays, of receipt of an Application for Payment unless such Application is not approved. Notwithstanding the foregoing, where the OWNER is other than the City of New York and is a municipal corporation which requires an elected official to approve progress payments, "promptly pay" shall mean payment within forty-five days, excluding legal holidays, of receipt of an approved Application for Payment.

Upon final completion and acceptance of the Work in accordance with paragraph 14.13 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.13.

d) All material and work covered by partial payments made shall hereupon become the property of the Owner but this provisions shall not be construed as relieving the Contractor from the sole responsibility for all materials and work upon which such payments have been made, or the restoration of any damaged or destroyed work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the Contract.

e) The obligation of the Owner to make any of the payments required under any of the provisions of this Contract shall be subject to (1) any unsettled claims against the Contractor for labor or material; (2) reasonable deductions on account of defects in material or workmanship; and (3) any claims which the Owner may have against the Contractor under, or in connection with, this Contract. Any overpayments to the Contractor shall, unless otherwise adjusted, be paid to the Owner upon demand.

f) The Contractor shall execute and deliver at the time of, and as a condition precedent to final payment, a release in form and substance satisfactory to and containing such exceptions as may be found appropriate by the Engineer, discharging the Owner, its officers, agents and employees of and from liabilities, obligations, and claims arising under this Contract.

ARTICLE 10 ASSIGNMENT OR DELEGATION

The Contractor shall not assign any rights or interest under this contract or in any other manner dispose of its interest herein, nor shall the contractor delegate its duties and responsibilities under this contract without the prior written approval of the Owner.

ARTICLE 11 INSPECTION AND TESTING

a) All material and workmanship shall be subject to inspection by the Owner, the Engineer, and the New York State Department of Environmental Conservation, examination and testing at any and all times during manufacture or construction thereof and at any and all places where such manufacture or construction is carried on. The Owner and Engineer shall have the right to reject defective material and workmanship, or in its discretion, require its correction. Rejected workmanship shall be satisfactorily corrected, and rejected material shall be satisfactorily replaced with proper material without charge therefor, and the Contractor, shall promptly segregate and remove the rejected material from the premises. If the Contractor fails to proceed at once with the replacement of rejected material and the correction of defective workmanship the Owner may by contract or otherwise, replace such material and correct such workmanship and charge the cost thereof to the Contractor, or may terminate the right of the Contractor to proceed as provided in Article 24.

b) The Contractor shall furnish promptly without additional charge all reasonable facilities, labor and materials necessary for the safe and conduct of all inspections and tests that may be required by the Engineer. All inspections and tests by the Engineer shall be performed in such manner as not to unnecessarily delay the work.

c) Should it be considered necessary or advisable by the Owner, at any time before final acceptance of the entire work, to make an examination of work already completed by removing or tearing out same, the Contractor shall on request promptly furnish all necessary facilities, labor and material for same. If such work is found to be defective or nonconforming in any material respect, due to fault of the Contractor or his sub-contractor the Contractor shall defray all of the expenses of such examination and of satisfactory reconstruction and be responsible for any resulting delay. If, however, such work is found to meet the requirements of the Contract, the actual cost of labor, equipment and material necessarily involved in the examination of the work shall be paid to the Contractor, and he shall, in addition, if completion of the work has been delayed thereby, be granted a suitable extension of time on account of the additional work involved.

ARTICLE 12 TESTING FOUNDATIONS

Test of the bearing value of the material underlying the foundation of the structure to be built shall be made at such times and places and in such a manner as may be directed by the Engineer. As far as practicable, test piles when used shall be so located that they can become part of the finished structure. The Contractor shall furnish the Engineer ample opportunity for viewing tests and making such records as the latter may consider available. The Contractor shall be entitled to compensation for making such tests in the same manner as for a change required by the Engineer under Article 13 to the extent the contract price does not include compensation therefor. Notice must be given or intention to request compensation in accordance with Article 13.

ARTICLE 13 CHANGES AND EXTRAS

a) The Engineer may at any time, without notice to the sureties, make changes in the drawings or specifications of the Contract within the general scope thereof. If such changes cause an increase or decrease in the cost of doing the work under this Contract or in the time required for its performance, an equitable adjustment in the pertinent contract terms shall be made as hereinafter provided and the Contract shall be modified accordingly and an equitable adjustment shall be made in accordance with the mutual agreement of the parties, provided however; that if the parties are unable to agree, the Engineer shall determine such an equitable adjustment, if any, to be made in the contract terms, and his determination shall be final, subject only to appeal under the terms of Article 21.

b) Nothing provided in this article shall excuse the Contractor from diligently proceeding with the prosecution of the work so changed.

ARTICLE 14 LIQUIDATED DAMAGES

a) If the Contractor fails to complete the work or any part thereof within the time specified in Article 3, or applicable extension thereof, it will be difficult or impossible to ascertain the actual damages for the delay and in lieu thereof the Contractor shall pay to the Owner as fixed, agreed and liquidated damages for each calendar day of delay until the delayed work is completed or accepted, the amount of $1,000.00 per day or unless stated otherwise herein. It is agreed, however, that the Contractor shall not be charged with liquidated or actual damages because of any delays in the completion of the work due to causes beyond its control, including, but not restricted to, acts of God, or of the public enemy, acts of the City or any State or political subdivision thereof (including, but not restricted to the operation of any governmental preferences, priorities, or allocations of or material), act of another contractor in the performance of a contract with the Owner, floods, earthquakes, or other catastrophes, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather. The determination of the Engineer shall be final, subject to appeal under the provisions of Article 21.

b) If no amount for liquidated damages is stated in the specifications above, then, notwithstanding the provisions of this article, no liquidated damages shall be assessed hereunder.

ARTICLE 15 DEFENSE OF ACTIONS

Neither the Owner nor any of its Officers or agents shall in any manner be answerable or responsible for any injury done or damages or compensation required to be paid under any present or future law, to any person or persons whatever, whether employees of the Contractor or otherwise, or for damages to any property, whether belonging to the Owner or to others occurring during or resulting from work which is the subject matter of this contract. The Contractor shall and will properly guard against all such injuries, damages and compensation. The Contractor shall at all times indemnify and save the Owner and its officers and agents harmless against all claims, law suits, injuries, damages compensation, awards and legal fees incurred in defending such claims and law suits, which arose out of or resulted from work under this contract, other than claims for the Owner's own negligence.

ARTICLE 16 CERTIFICATE OF INSURANCE

a) The Contractor shall be responsible for obtaining and maintaining during the life of this Contract any and all insurance policies as may be necessary to protect himself, his Subcontractors, and the Owner from claims arising from bodily injury, property damage or death which may occur as a result of the work performed under this Contract. As evidence of good faith under this section, the Contractor shall furnish the Owner with certificates of the following insurance policies, which are to be accepted as the minimum required:

1) See Article 5 of the Supplementary Conditions.

b) A certificate of insurance indicating compliance with the aforementioned requirement shall be provided to the Owner prior to the commencement of any work under this contract. The Owner's failure to expressly demand the production of a certificate of insurance shall not be deemed a waiver of the requirements of this Article, and the same may be requested at any time of the Contractor herein. The failure to provide such proof of insurance shall result in this contract being avoidable at the option of the Owner.

ARTICLE 17 COMPOSITION OF THE CONTRACTOR

If the Contractor hereunder is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder.

ARTICLE 18 LIENS

The Contractor at no time shall suffer or permit any lien, attachment or other encumbrance under the laws of the State, or otherwise, by any person or corporation whatsoever to remain on file in the office of the Commissioner of Finance against any money due, or to become due, for any work done or materials furnished under this Contract, or by reason of any other claim or demand against the Contractor, and any such lien attachment or encumbrance, until it is removed, shall preclude any and all claims or demands for any payment whatsoever under or by virtue of this Contract.

ARTICLE 19 MAINTENANCE OF SITE

The Contractor shall maintain the site in a neat condition and no undesirable accumulation of debris or material shall be allowed to exist. On or before the completion of the work, the Contractor shall, without additional compensation, except as otherwise specifically directed or permitted in writing, demolish and remove all temporary buildings and structures built by him, shall remove from the premises all lumber, shoring, debris, surplus materials of every kind, plant, machinery, and other equipment installed by him; shall effectively remove and dispose of in a satisfactory manner all accumulations of any organic refuse from any grounds occupied by him; and shall leave all parts of the premises of private persons and corporations and adjacent property which may have been affected by his operations, including streets and sidewalks, in a neat and satisfactory manner. If within two (2) days after a request to comply with the above the Contractor does not fully comply, the Engineer may order such work done at the expense of the Contractor.

ARTICLE 20 RATE OF PROGRESS

Within ten (10) days of the date of award of the Contract, the Contractor shall furnish the Engineer with his proposed schedule of progress which shall show his contemplated procedure and times of completion of all parts of the work. If at any time the rate of progress is such that in the judgement of the Engineer the work will not be completed within the time specified, he may so notify the Contractor who thereupon will proceed at once with such additional force, machinery, equipment and methods as to finish the work on time; but the failure of this Engineer to give such notice shall not relieve the Contractor of his obligations to complete the work at the time specified in this Contract.

ARTICLE 21 DISPUTES

Except as otherwise provided in this Contract, any dispute concerning a question of fact arising under this Contract which is not disposed of any agreement shall be decided by the Engineer, who shall reduce his decision to writing and mail, or otherwise furnish a copy thereof to the Contractor. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract and in accordance with the decision of the Engineer.

All other disputes shall be venue in the Supreme Court of the State of New York, Dutchess County.

ARTICLE 22 PATENT INDEMNITY

a) The Contractor agrees to indemnify the Owner and its officers, agents and employees against liability, including costs and expenses, for infringement upon any Letters of Patent of the United States arising out of the performance of this Contract.

b) The Contractor agrees to report to the Engineer promptly and in reasonable written detail each claim of patent infringement based on the performance of this Contract and asserted against it, or against any of its sub-contractors if it has notice thereof.

ARTICLE 23 SANITATION

Adequate sanitary conveniences of an approved type for the use of persons employed on the work, and properly secluded from public observation, shall be constructed and maintained by the Contractor in such a manner and at such points as shall be required or approved by the Engineer. These conveniences shall be maintained at all times. At the completion of the work they shall be removed from the premises, leaving the premises clean and free of nuisance.

ARTICLE 24 TERMINATION ON DEFAULT

a) The performance of work under this Contract may be terminated by the Owner in whole or in part, whenever the Contractor shall default in performance or shall so fail to make progress in the performance of the work hereunder as, in the opinion of the Engineer, to endanger the performance of this Contract in accordance with its terms. Termination of work hereunder shall be effected by delivery to the Contractor of a Default Notice of Termination specifying that termination is for default or failure to the extent to which performance or work under this Contract shall be terminated with the date upon which such termination shall become effective.

b) Upon termination of work pursuant to this Article, the Owner shall pay the Contractor at the bid prices for work satisfactorily completed and in place at the site of the effective date of termination minus the value of any defects or additional costs for completion.

ARTICLE 25 NONDISCRIMINATION

In accordance with Article 15 of the Executive Law (also known as the Human Rights Law) and all other State and Federal statutory and constitutional non-discrimination provisions, the Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex, national origin, age, disability or marital status.

Furthermore, in accordance with Section 220-e of the Labor Law, this is a contract for the construction at a public work, sale or distribution of materials, equipment or supplies, and to the extent that this contract shall be performed within the State of New York, the Contractor agrees that neither it nor its subcontractors shall, by reason of race, creed, color, disability, sex or national origin:

1. Discriminate in hiring or promotion of any individual who is qualified and available to perform the work.

2. Discriminate against or intimidate any employee hired for the performance of work under this contract.

ARTICLE 26 WARRANTY

a) Except as otherwise expressly provided in this Contract, the Contractor warrants all mechanical and electrical equipment to be free from defects of design, materials and workmanship, and warrants all materials and work provided under this Contract against defect or failure for one year from the date of final payment, and agrees to repair or replace any such defective material, equipment or work to the satisfaction of the Engineer and at no cost to the Owner within ten (10) days after receipt of written notice of any such defect.

The Contractor authorizes the Owner to retain not more than five percent (5%) of the moneys due him under the Contract for six months from date of final payment and to expend as much of this as is necessary to repair or replace any defective material, equipment or work upon the failure of the Contractor to do so as provided.

b) All warranties and guaranties of subcontractors, manufacturers or suppliers, expressed or implied, respecting any material or equipment used in or made a part of this work (whether on equipment of the nature above specified or otherwise) shall be deemed obtained by the Contractor as the agent of the Owner, and all such warranties and guaranties shall insure to the benefit of the Owner without the necessity of a separate transfer or assignment thereof.

c) The warranties and guaranties provided for in this Article shall not extend or apply to Owner furnished material or equipment, except as to such work as may be performed thereon by the Contractor.

d) The remedies provided in this Article shall not be restrictive of, but shall be cumulative and in addition to, all other remedies of the Owner in respect to latent defects or fraud. Such remedies shall not be held to limit any statutory or common law warranties.

ARTICLE 27 WAGES AND HOURS OF WORK

No laborer, workman, chauffeur, or mechanic in the employ of the Contractor shall be permitted or required to work more than eight (8) hours in any one day or more than five (5) days in any one week, except in case of extraordinary emergencies, including fire, flood, or danger to life or property, or in case of National emergency when proclaimed by the President of the United States of America. No person shall be so employed more than eight (8) hours in any day or more than five (5) days in any week except in such emergency.

In the event of such proclamation of a national emergency by the President, application for dispensation from the provisions of Section 220 of the Labor Law of the State of New York must be made pursuant to the provisions of the war emergency act and such dispensation granted pursuant thereto before any laborer, workman or mechanic may be employed beyond the hours specified in Section 220 of the Law of the State of New York.

The following forms a part of these specifications in compliance with Article 8, Section 220, Division 3 of the Labor Law of the State of New York, which reads in part as follows:

> "It shall be the duty of the fiscal officer, as defined in this section, to ascertain and determine the schedule of wages to be paid workmen, laborers and mechanics on each such public work prior to the time of the advertisement for bids, and such schedule of wages shall be annexed to, and form a part of, the specifications for the work. Such fiscal officer shall file with the department having jurisdiction such schedule of wages to the time of the advertisement for bids on all public works proposed to be constructed. The term "contract", as used in this subdivision, shall include reconstruction and repair of any such works."

Furthermore, the Contractor and its subcontractors must pay at least the prevailing wage rate and pay or provide the prevailing supplements, including the premium rates for overtime pay, as determined by the State Labor Department in accordance with the Labor Law.

ARTICLE 28 WORKER'S COMPENSATION

The Contractor agrees to obtain any and all insurance as required pursuant to the provisions of the Worker's Compensation Law of the State of New York. The failure to provide such coverage shall render the underlining contract null and void.

ARTICLE 29 LIABILITY OF THE OWNER

Neither the Owner nor any agent, officer, or representative thereof, shall be liable for or be held to pay any money to the Contract except as herein provided; and the acceptance by the Contractor of the payment provided on the final estimate shall operate as, and shall be a release of said Owner, its officers and agents, from all claims and liability to the Contractor for anything done or furnished for or relating to the above work, or for any act or neglect of the Owner of any person relating to or affecting the work, except the claim against the Owner of remainder, if any there be, of the amount kept or retained as herein provided.

ARTICLE 30 TERMINATION FOR REFUSAL TO TESTIFY

The bidder or Contractor, as the case may be, agrees on his own behalf (if he is an individual), or on behalf of the partnership (if it be a partnership), or on behalf of its directors, officers, and employees (if it be a corporation), that upon the refusal of said person, firm, partnership, or corporation, when called before a Grand Jury to testify concerning any transaction in connection with the within specifications or contract, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning the within specifications or contract.

a) Such person, and any firm, partnership or corporation of which he is a member, partner, director or officer, shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with the City of Poughkeepsie, or any public department, agency or official thereof for goods, work or services, for a period of five (5) years after such refusal, and

b) Any and all contracts made by such person, firm, partnership or corporation with the City of Poughkeepsie or any public department, agency or official thereof, since July 1, 1959, by such person, and by any firm, partnership or corporation of which he is a member, partner, director, or officer may be canceled or terminated by the City of Poughkeepsie without incurring any penalty or damages on account of such cancellation or termination, but any monies owning by the City of Poughkeepsie for goods delivered or work done prior to the cancellation or termination shall be paid.

Bidder warrants that he (they) is (are) not disqualified from bidding on the herein proposed contract by reason of the provisions set forth in Chapter 105, Laws of 1959 (Section 103A, General Municipal Law).

ARTICLE 31 RETENTION OF RECORDS

The Contractor shall maintain any and all books, documents, papers, and other evidence directly pertinent to the performance of work under this Contract in accordance with generally acceptable accounting principles and practices consistently applied, and 40 CFR Part 30 in effect during the term of this Contract. Bid records shall include, but shall not be limited to, employment records, purchase records, insurance records, schedule of hours worked, records of all payments, record of any claims made against Contractor, contracts and correspondence with subcontractors.

The Owner, the Department of Environmental Conservation, the State Comptroller, the State Attorney General, and the State Department of Labor or any of their authorized representatives shall have access to all such books, records, documents and other evidence for the purpose of inspection, audit and copying for a period of six (6) years following final payment or the termination of this Contract whichever is later, and any extensions thereto. These books, records, documents and other evidence shall be accessible within the State of New York to the agencies identified above for the time period stated above. "Termination of this contract," as used in this clause, shall mean the later of completion of the work of the contract or the end date of the term stated in the contract.

ARTICLE 32 CONFLICT OF INTEREST

To the best of the Contractor's knowledge and belief, the Contractor warrants that there are no relevant facts or circumstances which could give rise to an organizational conflict of interest, as herein defined, or that the Contractor has disclosed all such relevant information to the Municipality.

An organizational conflict of interest exists when the nature of the work to be performed under this Contract may, without some restriction on future activities, either result in an unfair competitive advantage to the Contractor or impair the Contractor's objectivity in performing the work for the Municipality.

The Contractor agrees that if an actual, apparent or potential organizational conflict of interest is discovered at any time after award, whether before or during performance, the Contractor will immediately make a full disclosure in writing to the Municipality and the State Department of Environmental Conservation. This disclosure shall include a description of actions which the Contractor has taken or proposes to take, after consultation with the Municipality, to avoid, mitigate, or minimize the actual or potential conflict.

Remedies - The Municipality may terminate this contract in whole or in part, if it deems such termination necessary to avoid an organizational or personal conflict of interest, or an unauthorized disclosure of information. If the Contractor was aware of a potential conflict of interest prior to award, or discovered an actual or potential conflict after award and did not disclose or misrepresent relevant information to the Municipality, the Municipality may terminate the contract, or pursue such other remedies as may be permitted by law or this contract. The terms of other applicable contract provisions regarding termination shall apply to termination by the Municipality pursuant to this clause.

The Contractor further agrees to insert in any subcontract hereunder, provisions which shall conform to the language
of this clause.

a) In addition to the requirements of the above clauses with respect to "Organizational Conflicts of Interest," the following provision with regard to employee personnel performing under this contract shall apply until the earlier of the termination date of the affected employee(s) or the duration of the contract.

   The Contractor agrees to notify the Department and the Municipality immediately of any actual, apparent or potential personal conflict of interest with regard to any employee, subcontractor employee, or consultant working on or having access to information regarding this contract, as soon as the Contractor becomes aware of such conflict. A personal conflict of interest is defined as a relationship of an employee, subcontractor employee, or consultant with an entity that may impair or appear to impair the objectivity of the employee, subcontractor employee, or consultant in performing the contract work. The Municipality will notify the Contractor of the appropriate action to be taken.

b) To the extent that the work under this contract requires access to proprietary or confidential business or financial data of other companies, and as long as such data remains proprietary or confidential, the Contractor shall protect such data from unauthorized use and disclosure and agrees not to use it to compete with such companies.

c) The Contractor shall certify annually that, to the best of the Contractor's knowledge and belief, all actual, apparent or potential conflicts of interest, both personal and organizational, have been reported to the Department and the Municipality. Such certification must be signed by a senior executive of the Contractor and submitted in accordance with instructions provided by the Municipality. Along with the annual certification, the Contractor shall also submit an update of any changes in the conflict of interest plan submitted with its proposal for this contract. The initial certification shall cover the one-year period from the date of contract award, and all subsequent certifications shall cover successive annual periods thereafter. The certification is to be submitted no later than 45 days after the close of the previous certification period covered.

d) The Contractor recognizes that employees in performing this contract may have access to data, either provided by the Department or the Municipality or first generated during contract performance, of a sensitive nature which should not be released without Department/Municipality approval. Therefore, the Contractor agrees to obtain confidentiality agreements from all such employees working on requirements under this contract including subcontractors and consultants. Such agreements shall contain provisions which stipulate that each employee agrees that the employee will not disclose, either in whole or in part, to any entity external to the Department, Department of Health or the New York State Department of Law, any information or data provided by the Department or first generated by the Contractor under this contract, any site-specific cost information, or any enforcement strategy without first obtaining the written permission of the Municipality. If a Contractor, through an employee or otherwise, is subpoenaed to testify or produce documents, which could result in such disclosure, the contractor must provide immediate advance notification to the Municipality/Department so that the Department can authorize such disclosure or have the opportunity to take action to prevent such disclosure. Such agreements shall be effective for the life of the contract and for a period of five (5) years after completion of the contract.

e) The Contractor agrees to insert in each subcontract or consultant agreement placed hereunder (except for subcontracts or consultant agreements for well drilling, fence erecting, plumbing, utility hookups, security guard services, or electrical services) provisions which shall conform substantially to the language of this clause, including this paragraph (e), unless otherwise authorized by the Municipality.

ARTICLE 33 AFFIRMATIVE ACTION

a) The Contractor agrees to be bound by the provisions of New York State Executive Law Article 15-A, Sections 312, 313 and 316 and the regulations promulgated thereunder.

As provided thereunder, the Contractor is required to make good faith efforts to solicit the meaningful participation of minority and women owned business enterprises identified in the Directory of Certified Businesses provided by the New York State Department of Economic Development's Division of Minority and Women's Business Development.

b) The Contractor agrees to include the requirements set forth in paragraph (a) above and paragraphs (c), (d), (e) and (f) below in every subcontract in such a manner that the provisions will be binding upon each subcontractor as to work in connection with such contract. For the purpose of this paragraph, a "subcontract" shall mean an agreement providing for a total expenditure in excess of $25,000 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon in which a portion of Contractor's obligation under a State contract is undertaken or assumed.

c) The Contractor will not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status, and will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. For purposes of this article, affirmative action shall mean recruitment, employment, job assignment, promotion, upgradings, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation.

d) At the request of the contracting agency, the contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the contractor's obligations herein.

e) The Contractor shall state, in all solicitations or advertisements for employees, that, in the performance of the contract, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

f) The Contractor also agrees to incorporate into any contract with subcontractors, contractual provisions applicable to record keeping, reporting, notice requirements and actions determined to be necessary by the Department to implement the requirements of the Minority/Women Business Enterprise - Equal Employment (M/WBE-EEO) utilization plan, and of Executive Law Article 15-A, regulations promulgated thereunder, and other applicable law and regulations.

ARTICLE 34 CONTRACT DOCUMENTS

The Contract Documents which comprise the agreement between Owner and Contractor concerning the Work consist of the following:

a) This Agreement (pages A-1 to A-21, inclusive).

b) Exhibits to this Agreement (pages _____ to _____, inclusive).

c) Performance, Payment, and other Bonds, identified as exhibits ____ and consisting of _____ pages.

d) Notice to Proceed.

e) General Conditions (pages GC-1 to GC-35, inclusive).

f) Supplementary Conditions (pages SC-1 to SC-16, inclusive).

g) Specifications bearing the title Project Manual – The DeLaval Property, Environmental Restoration Program Project and consisting of 5 divisions, as listed in table of contents thereof.

h) Drawings consisting of a cover sheet and sheets numbered _ through _____, inclusive with each sheet bearing the following general title:

k) Addenda numbers _____ to ____, inclusive.

l) Contractor's Bid (pages _ to _____, inclusive) marked exhibit _____.

o) Documentation submitted by Contractor prior to Notice of Award (pages__ to __, inclusive).

p) The following which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto: All Written Amendments and other documents amending, modifying or supplementing the Contract Documents pursuant to paragraphs 3.5 and 3.6 of the General Conditions.

The documents listed in paragraph b) et seq. above are attached to this Agreement (except as expressly noted otherwise above) in Exhibit A.

There are not Contract Documents other than those listed above in this Article 34. The Contract Documents may only be amended, modified or supplemented as provided in paragraphs 3.5 and 3.6 of the General Conditions.

If the terms of any Contract Documents are inconsistent with the terms of this Agreement, the terms of this Agreement shall prevail.

ARTICLE 35 ENTIRE AGREEMENT

The Contract herein represents the entire understanding between the parties and shall not be modified except by a signed agreement mutually entered by the parties hereto.

THE CITY OF POUGHKEEPSIE

BY: _____
MAYOR

BY: _____
CONTRACTOR

STATE OF NEW YORK)
) SS:
COUNTY OF DUTCHESS)

On the ___ day of _____, 20__, before me personally came _____ _____, to me known, who being by me duly sworn, did depose and say that she resides at _____, that she is the Mayor of the corporation described herein, and which executed the foregoing instrument; that she knows the seal of the corporation; that the seal affixed to said instrument is such corporation seal; that it was so affixed by order of the Common Council of said corporation; and that she signed her name thereto by like order.

_____
NOTARY PUBLIC

STATE OF NEW YORK)
) SS:
COUNTY OF DUTCHESS)

On the _____ day of _____, 20__, before me personally came _____, to me known, who, being by me duly sworn, did depose and say that (s)he resides at _____ _____, that (s)he is the _____ of _____ _____, the corporation described herein, and which executed the foregoing instrument; that (s)he knows the seal of the corporation; that the seal affixed to said instrument is such corporation seal; that it was so affixed by order of the Board of Directors of said corporation; and that (s)he signed his/her name thereto by like order.

_____
NOTARY PUBLIC

SCHEDULE A

CONSTRUCTION PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address)

SURETY (Name and Principal Place of Business):

OWNER (Name and Address)

CONSTRUCTION CONTRACT

Date: _____ Amount: _____

Description (Name and Location):

BOND

Date (not earlier than Construction Contract Date): _____ Amount: _____

Modifications to this Bond Form:

CONTRACTOR AS PRINCIPAL		SURETY	
Company	(Corp Seal)	Company	(Corp Seal)
Signature: _____		Signature: _____	
Name and Title:		Name and Title:	

CONTRACTOR AS PRINCIPAL		SURETY	
Company	(Corp Seal)	Company	(Corp Seal)
Signature: _____		Signature: _____	
Name and Title:		Name and Title:	

EJCDC No. 1910-28B (1984 Edition)
Prepared through the joint efforts of The Surety Association of America, Engineers' Joint Contract Documents Committee, The Associated General Contractors of America, and the American Institute of Architects.

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except to participate in conferences as provided in Subparagraph 3.1.

3. If there is no Owner Default, the Surety's obligation under this Bond shall arise after:

3.1 The Owner has notified the Contractor and the Surety at its address described in Paragraph 10 below, that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. If the Owner and the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any subsequently to declare a Contractor Default; and

3.2 The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Subparagraph 3.1; and

3.3 The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.

4. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1 Arrange for the Contractor, with Consent of the Owner, to perform and complete the Construction Contract; or

4.2 Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; or

4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for Contract or performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and the Contractor selected with the Owners's concurrence, to be secured with performance and payment bonds executed by qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default; or

4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances.

1. After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, tender payment therefore to the Owner; or
2. Deny liability in whole or in part and notify the Owner citing reasons therefor.

5. If the Surety does not proceed as provided in Paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this bond fifteen days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Subparagraph 4.4, and the Owner refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

6. After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:

6.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract:

6.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 4; and

6.3 Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of he Contractor.

7. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, include changes of time to the Construction Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal, or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by the law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.

11. When this bond has been furnished to comply with a statutory or other legal requirements in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirements shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirements shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amount received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduce by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

12.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

12.3 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.

12.4 Owner Default: Failure of the Owner, which as neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with other terms thereof.

CONSTRUCTION PAYMENT BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address)

SURETY (Name and Principal Place of Business):

OWNER (Name and Address)

CONSTRUCTION CONTRACT

Date: _____ Amount: _____

Description (Name and Location):

BOND

Date (not earlier than Construction Contract Date): _____ Amount: _____

Modifications to this Bond Form:

CONTRACTOR AS PRINCIPAL		SURETY	
Company	(Corp Seal)	Company	(Corp Seal)
Signature: _____		Signature: _____	
Name and Title:		Name and Title:	

CONTRACTOR AS PRINCIPAL		SURETY	
Company	(Corp Seal)	Company	(Corp Seal)
Signature: _____		Signature: _____	
Name and Title:		Name and Title:	

EJCDC No. 1910-28B (1984 Edition)
Prepared through the joint efforts of The Surety Association of America, Engineers' Joint Contract Documents Committee, The Associated General Contractors of America, and the American Institute of Architects.

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.

2. With respect to the Owner, this obligation shall be null and void if the Contractor:

2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2 Defends, indemnifies and hold harmless the Owner from all claims, demands, liens or suits by any person or entity who furnished labor, materials, or equipment for use in the performance of the Construction Contract, provided the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands liens or suits to the Contractor and the Surety, and provided there is not Owner Default.

3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

4.1 Claimants who are employed by or have a direct contract with the Contractor have given notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2 Claimants who do not have a direct contract with the Contractor:

1. Have furnished written notice to the Contractor and sent a copy, or notice thereof, to the Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and
2. Have either received a rejection in whole or in part from the Contractor, or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly; and
3. Not having been paid within the above 30 days, have sent a written notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor.

5. If a notice required by Paragraph 4 is given to the Contractor to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1 Send an answer to the Claimant, with a copy to the Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2 Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amount owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any , under any Construction Performance Bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

9. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for payment of any costs or expenses of any claimant under this Bond, and shall have under this Bond no obligations to make payments to give notices on behalf of, or otherwise have obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the work or part of the work is located or after the expiration of one year from the date (1)on which the Claimant gave the notice required by Subparagraph 4.1 or Clause 4.2 (iii), or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the Owner, or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this bond has been furnished to comply with a statutory or other legal requirements in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirements shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirements shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. Definitions.

15.1 Claimant: An individual or entity have a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials, or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

15.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3 Owner Default: Failure of the Owner, which as neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with other terms thereof.

(FOR INFORMATION ONLY - Name, Address and Telephone)
AGENT or BROKER: OWNER'S REPRESENTATIVE (Architect, Engineer or other party):

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

1.1 **Addenda** – Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Bidding Requirements or the Contract Documents.

1.2 **Agreement** – The written contract between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.3 **Application for Payment** – The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

1.4 **Asbestos** – Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

1.5 **Bid** – The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.6 **Bidding Documents** – The advertisement or invitation to Bid, instructions to bidders, the Bid form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

1.7 **Bidding Requirements** – The advertisement or invitation to Bid, instructions to bidders, and the Bid form.

1.8 **Bonds** – Performance and Payment bonds and other instruments of security.

1.9 **Change Order** – A document recommended by ENGINEER, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

1.10 **Contract Documents** – The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders and ENGINEER's written interpretations and clarifications issued pursuant to paragraphs 3.5, 3.6.1, and 3.6.3 on or after the Effective Date of the Agreement. Shop Drawing submittals approved pursuant to paragraphs 6.26 and 6.27 and the reports and drawings referred to in paragraphs 4.2.1.1 and 4.2.2.2 are not Contract Documents.

1.11 **Contract Price** – The money payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.9.1 in the case of Unit Price Work).

1.12 **Contract Times** – The numbers of days or the dates stated in the Agreement: (i) to achieve Substantial Completion, and (ii) to complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.13.

1.13 **CONTRACTOR** – The person, firm or corporation with whom OWNER has entered into the Agreement.

1.14 **Defective** – An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, in that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.8 or 14.10).

1.15 **Drawings** – The drawings which show the scope, extent, and character of the Work to be furnished and performed by CONTRACTOR and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents. Shop drawings are not Drawings as so defined.

1.16 **Effective Date of the Agreement** – The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

1.17 **ENGINEER** – The person, firm, or corporation named as such in the Agreement.

1.18 **ENGINEER's Consultant** – A person, firm, or corporation having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

1.19 **Field Order** – A written order issued by ENGINEER which orders minor changes in the Work in accordance with paragraph 9.5 but which does not involve a change in the Contract Price or the Contract Times.

1.20 **General Requirements** – Sections of Division 1 of the Specifications.

1.21 **Hazardous Waste** – The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

1.22 **Laws and Regulations; Laws or Regulations** – Any and all applicable laws, rules, regulations, ordinances, codes and orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.

1.23 **Liens** – Liens, charges, security interests, or encumbrances upon real property or personal property.

1.24 **Milestone** – A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

1.25 **Notice of Award** – The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.26 **Notice to Proceed** – A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR's obligations under the Contract Documents.

1.27 **OWNER** – The public body or authority, corporation, association, firm, or person with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided.

1.28 **Partial Utilization** – Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

1.29 **PCBs** – Polychlorinated biphenyls.

1.30 **Petroleum** – Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Wastes and crude oils.

1.31 **Project** – The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.32 **Radioactive Material** – Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

1.33 **Resident Project Representative** - The authorized representative of ENGINEER who may be assigned to the site or any part thereof.

1.34 **Samples** – Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

1.35 **Shop Drawings** – All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

1.36 **Specifications** – Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

1.37 **Subcontractor** – An individual, firm, or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for performance of a part of the Work at the site.

1.38 **Substantial Completion** – The Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by ENGINEER's definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended; or if no such certificate is issued, when the Work is complete and ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.13. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

1.39 **Supplementary Conditions** – The part of the Contract Documents which amends or supplements these General Conditions.

1.40 **Supplier** – A manufacturer, fabricator, supplier, distributor, materialman, or vendor having direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

1.41 **Underground Facilities** – All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone, or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

1.42 **Unit Price Work** – Work to be paid for on the basis of unit prices.

1.43 **Work** – The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work includes and is the result of performing or furnishing labor and furnishings and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.

1.44 **Work Change Directive** - A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER, ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.2 or 4.3 or to emergencies under paragraph 6.23. A Work Change Directive will not change the Contract Price or the Contract Times, but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times as provided in paragraph 10.2.

1.45 **Written Amendment** – A written amendment of the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

Delivery of Bonds:

2.1 When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish in accordance with Article 5

Copies of Documents:

2.2 OWNER shall furnish to CONTRACTOR up to ten copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction

Commencement of Contract Times; Notice to Proceed:

2.3 The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement, or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty days after the Effective Date of the Agreement. In no event will the Contract Time commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

Starting the Work:

2.4 CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run, but no Work shall be done at the site prior to the date on which the Contract Times commence to run.

Before Starting Construction:

2.5 Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity or discrepancy in the Contract Documents, unless CONTRACTOR knew or reasonably should have known thereof.

2.6 Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements). CONTRACTOR shall submit to ENGINEER for review:

2.6.1 a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2.6.2 a preliminary schedule of Shop Drawings and Sample submittals which will list each required submittal and the times for submitting, reviewing and processing such submittal;

2.6.3 a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include and appropriate amount of overhead and profit applicable to each item of Work.

2.7 Before any Work at the site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

Preconstruction Conference:

2.8 Within twenty days after the Contract Times start to run, but before any Work at the site is started, a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.6, procedures for handling Shop Drawings, and other submittals, processing Applications for Payment and maintaining required records.

Initially Acceptable Schedules:

2.9 Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.6. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until the schedules are submitted to and acceptable to ENGINEER as provided below. The progress schedule will be acceptable to ENGINEER as providing an orderly progression of the Work to completion within any specified Milestones and the Contract Times, but such acceptance will neither impose on ENGINEER responsibility for the sequencing, scheduling, or progress of Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefore, CONTRACTOR's schedule of Shop Drawing and Sample submissions will be acceptable to ENGINEER as providing a workable arrangement for reviewing and processing the required submittals. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance.

ARTICLE 3 - Contract Documents: INTENT, AMENDING, REUSE

Intent:

3.1 The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary: what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2 It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed whether or not

specifically called for. When words or phrases which have a well-known technical or construction industry or trade meaning are used to describe Work, materials, or equipment, such words or phrases shall be interpreted in accordance with the meaning. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in paragraph 9.4.

3.3 **Reference to Standards and Specifications of Technical Societies: Reporting and Resolving Discrepancies:**

3.3.1 Reference to standards, specifications, manuals or codes of any technical society, organization, or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code or Laws or Regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

3.3.2 If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such Law or Regulation applicable to the performance of the Work or of any such standard, specification, manual, or code or of any instruction of any Supplier referred to in paragraph 6.5. CONTRACTOR shall report it to ENGINEER in writing at once, and, CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as authorized by paragraph 6.23) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.5 or 3.6; provide, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

3.3.3 Except as otherwise specifically stated in the Contract Documents or as may be provided by amendment or supplement thereto issued by one of the methods indicated in paragraph 3.5 or 3.6, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

3.3.3.1 the provisions of any such standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents): or

3.3.3.2 the provisions of any such Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

No provision of any such standard, specification, manual, code, or instruction shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of paragraph 9.13 or any other provision of the Contract Documents.

3.4 Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," "as allowed," "as approved" or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review, or judgment will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.13 or any other provision of the Contract Documents.

Amending and Supplementing Contract Documents:

3.5 The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

3.5.1 a formal Written Amendment.

3.5.2 a Change Order (pursuant to paragraph 10.4) or

3.5.3 a Work Change Directive (pursuant to paragraph 10.1).

Supplementing Contract Documents:

3.6 In addition, the requirements of the Contract Documents may be supplemented, and minor variations, and deviations of the Work may be authorized, in one or more of the following ways:

3.6.1 a Field Order (pursuant to paragraph 9.5).

3.6.2 ENGINEER's approval of a Shop Drawing or Sample (pursuant to paragraphs 6.26 and 6.27), or

3.6.3 ENGINEER's written interpretation or clarification (pursuant to paragraph 9.4).

Reuse of Documents:

3.7 CONTRACTOR and any Subcontractor or Suppler or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER.

ARTICLE 4 - AVAILABILITY OF LANDS: SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

Availability of Lands:

4.1 OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a correct statement of record legal title and legal description of the lands upon which the Work it to be performed and OWNER's interest therein as necessary for giving notice of or filing a mechanic's lien against such lands in accordance with applicable Laws and Regulations. OWNER shall identify any encumbrances or restrictions not of general application but specifically related to use of lands so furnished with which CONTRACTOR will have to comply in performing the Work. Easements for permanent structures or permanent in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR and OWNER are unable to agree on entitlement to or the amount or extent of any adjustments in the Contract Price or the Contract Times as a result of any delay in OWNER's furnishing these lands, rights-of-way or easements. CONTRACTOR may make a claim therefore as provided in Articles 11 and 12. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 **Subsurface and Physical Conditions:**

4.2.1 **Reports and Drawings**: Reference is made to the Supplementary Conditions for identification of:

4.2.1.1 **Subsurface Conditions:** Those reports of explorations and tests of Subsurface conditions at or contiguous to the site that have been utilized by ENGINEER in preparing the Contract Documents; and

4.2.1.2 **Physical Conditions:** Those drawings of physical conditions in or relating to existing surface or Subsurface structures at or contiguous to the site (except Underground Facilities) that have been utilized by ENGINEER in preparing the Contract Documents.

4.2.2 **Limited Reliance by CONTRACTOR Authorized; Technical Data:** CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

4.2.2.1 the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto, or

4.2.2.2 other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings, or

4.2.2.3 any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such data, interpretations, opinions, or information.

4.2.3 **Notice of Differing Subsurface or Physical Conditions:** If CONTRACTOR believes that any Subsurface or physical condition at or contiguous to the site that is uncovered or revealed either:

4.2.3.1 is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is materially inaccurate, or

4.2.3.2 is of such a nature as to require a change in the Contract Documents, or

4.2.3.3 differs materially from that shown or indicated in the Contract Documents, or

4.2.3.4 is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents; then

CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as permitted by paragraph 6.23), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such conditions or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

4.2.4 **ENGINEER's Review:** ENGINEER will promptly review the pertinent conditions, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

4.2.5 **Possible Contract Documents Change:** If ENGINEER concludes that a change in the Contract Documents is required as a result of a condition that meets one or more of the categories in paragraph 4.2.3., a Work Change Directive or a Change Order will be issued as provided in Article 10 to reflect and document the consequences of such change.

4.2.6 **Possible Price and Times Adjustments:** An equitable adjustment in the Contract Price or in the Contract Times, or both, will be allowed to the extent that the existence of such uncovered or revealed condition causes an increase or decrease in CONTRACTOR's cost of, or time required for performance of the Work; subject, however, to the following:

4.2.6.1 such condition must meet any one or more of the categories described in paragraphs 4.2.3.1 through 4.2.3.4. inclusive;

4.2.6.2 a change in the Contract Documents pursuant to paragraph 4.2.5 will not be an automatic authorization of nor a condition precedent to entitlement to any such adjustment;

4.2.6.3 with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract price will be subject to the provisions of paragraphs 9.10 and 11.9; and

4.2.6.4 CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Times if;

4.2.6.4.1 CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a bid or becoming bound under a negotiated contract: or

4.2.6.4.2 the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

4.2.6.4.3 CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.2.3.

If OWNER and CONTRACTOR are unable to agree on entitlement to or as to the amount or length of any such equitable adjustment in the Contract Price or Contract Times, a claim may be made therefore as provided in Articles 11 and 12. However, OWNER, ENGINEER, and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.3 **Physical Conditions – Underground Facilities:**

4.3.1 **Shown or Indicated:** The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

4.3.1.1 OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

4.3.1.2 The cost of all of the following will be included in the Contract Price and CONTRACTOR shall have full responsibility for: (i) reviewing and checking all such information and data, (ii) locating all Underground Facilities shown or indicated in the Contract Documents, (iii) coordination of the Work with the owners of such Underground Facilities during construction, and (iv) the safety and protection of all such Underground Facilities as provided in paragraph 6.20 and repairing any damage thereto resulting from the Work.

4.3.2 **Not Shown or Indicated:** If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents. CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.23), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence of the Underground Facility. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued as provided in Article 10 to reflect and document such consequences. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility as provided in paragraph 6.20. CONTRACTOR shall be allowed and increase in the Contract Price or an extension of the Contact Times, or both, to the extent that they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or the amount or length of any such adjustment in Contract Price or Contract Times. CONTRACTOR may make a claim, therefore, as provided in Articles 11 and 12. However, OWNER, ENGINEER, and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses or damages incurred or sustained by CONTRACTOR on or in connection with any other project or anticipated project.

Reference Points:

4.4 OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER, CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.

4.5 **Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Material:**

4.5.1 OWNER shall be responsible for any Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material uncovered or revealed at the site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the site. OWNER shall not be responsible for any such materials brought to the site by CONTRACTOR, Subcontractor, Suppliers, or anyone else for whom CONTRACTOR is responsible.

4.5.2 CONTRACTOR shall immediately: (i) stop all Work in connection with such hazardous condition and in any area affected thereby (except in an emergency as required by paragraph 6.23), and (ii) notify OWNER and ENGINEER (and thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such hazardous condition to take corrective action, if any. CONTRACTOR shall not be required to resume Work in connection with such hazardous condition or in any such affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR special written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of such Work stoppage or such special conditions under which Work is agreed by CONTRACTOR to be resumed, either party may make a claim therefore as provided in Articles 11 and 12.

4.5.3 If after receipt of such special written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order such portion of the Work that is in connection with such hazardous condition or in such affected area to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a claim therefore as provided in Articles 11 and 12. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

4.5.4 To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, agents, other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages arising out of or resulting from such hazardous condition, provided that: (i) any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (ii) nothing in this subparagraph 4.5.4. shall obligate OWNER to indemnify any person or entity from and against the consequences of that person's or entity's own negligence.

4.5.5 The provisions of paragraphs 4.2 and 4.3 are not intended to apply to Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Material uncovered or revealed at the site.

ARTICLE 5 - BONDS AND INSURANCE

Performance, Payment, and Other Bonds:

5.1 CONTRACTOR shall furnish Performance and Payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, an shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff. Bureau of Government Financial Operations, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

5.2 If the surety on any Bond furnished by CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.1. CONTRACTOR shall within ten days thereafter substitute another bond and surety, both of which must be acceptable to OWNER.

5.3 **Licensed Sureties and Insurers; Certificates of Insurance:**

5.3.1 All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.3.2 CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain in accordance with paragraph 5.4. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain in accordance with paragraphs 5.6 and 5.7 hereof.

CONTRACTOR's Liability Insurance:

5.4 CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and furnished and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance and furnishing of the Work and CONTRACTOR's other obligations under the Contract

Documents, whether it is to be performed or furnished by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for whose acts any of them may be liable:

5.4.1 claims under workers' compensation, disability benefits and other similar employee benefit acts;

5.4.2 claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

5.4.3 claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

5.4.4 claims for damages insured by customary personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or by any other person for any other reason;

5.4.5 claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

5.4.6 claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

The policies of insurance so required by this paragraph 5.4 to be purchased and maintained shall:

5.4.7 with respect to insurance required by paragraphs 5.4.3 through 5.4.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers and employees of all such additional insureds;

5.4.8 include the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

5.4.9 include completed operations insurance;

5.4.10 include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.12, 6.16, and 6.31 through 6.33;

5.4.11 contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.3.2 will so provide);

5.4.12 remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing **defective** Work in accordance with paragraph 13.12; and

5.4.13 with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

OWNER's Liability Insurance:

5.5 In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.4. OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

Property Insurance:

5.6 Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

5.6.1 include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

5.6.2 be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that

shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework and Work in transit and shall insure against at least the following perils fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils as may be specifically required by the Supplementary Conditions;

5.6.3 include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

5.6.4 cover materials and equipment stored at the site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER; and

5.6.5 be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR and ENGINEER with thirty days written notice to each other additional insured to whom a certificate of insurance has been issued.

5.7 OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and any other persons or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

5.8 All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained by OWNER in accordance with paragraphs 5.6 and 5.7 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.11.

5.9 OWNER shall not be responsible for purchasing and maintaining any property insurance to protect the interests of CONTRACTOR, Subcontractors or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount, will be borne by CONTRACTOR, Subcontractor, or others suffering any such loss and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

5.10 If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraphs 5.6 or 5.7, OWNER shall, if possible, include such insurance, and the cost thereof will be changed to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.11 **Waiver of Rights:**

5.11.1 OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraphs 5.6 and 5.7 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other persons or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds in such policies and will provide primary coverage for all losses and damages caused by the perils covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, employees, and agents for all losses and damages caused by, arising out of, or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants and all other persons or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

5.11.2 In addition, OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, and agents of any of them, for;

5.11.2.1 loss due to business interruption, loss of use or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of or resulting from fire or

other peril, whether or not insureds by OWNER; and

5.11.2.2 loss or damage to the completed Project or part thereof caused by, arising out of or resulting from fire or other insureds peril coverage by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.10, after substantial completion pursuant to paragraph 14.8 or after final payment pursuant to paragraph 14.13.

Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in this paragraph 5.11.2 shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss the insurers will have not rights of recovery against any of CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, and agents of any of them.

Receipt and Application of Insurance Proceeds

5.12 Any insureds loss under the policies of insurance required by paragraphs 5.6 and 5.7 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to he requirements of any applic able mortgage clause and of paragraph 5.13. OWNER shall deposit in a separate account any money so received, and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

5.13 OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

Acceptance of Bonds and Insurance; Option to Replace:

5.14 If either party (OWNER or CONTRACTOR) has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within ten days after receipt of the certificates (or other evidence requested) required by paragraph 2.7. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

Partial Utilization – Property Insurance:

5.15 If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.10; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence:

6.1 CONTRACTOR shall supervise, inspect and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or specification of a specific means, method, technique, sequence or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to

see that the completed Work complies accurately with the Contract Documents.

6.2 CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications to the superintendent shall be as binding as if given to CONTRACTOR.

Labor, Materials and Equipment:

6.3 CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. Except as otherwise required for the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without OWNER's written consent given after prior written notice to ENGINEER.

6.4 Unless otherwise specified in the General Requirements, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

6.5 All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with instructions of the applicable Supplier, except as otherwise provided in the Contract Documents.

Progress Schedule:

6.6 CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.9 as it may be adjusted from time to time as provided below:

6.6.1 CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.9) proposed adjustments in the progress schedule that will not change the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

6.6.2 Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of paragraph 12.1. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.7 **Substitutes and "Or-Equal" Items:**

6.7.1 Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be accepted by ENGINEER under the following circumstances:

6.7.1.1 **"Or-Equal:"** If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for acceptance of proposed substitute items.

6.7.1.2 **Substitute Items:** If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under subparagraph 6.7.1.1, it will be considered a proposed substitute item. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute

therefore. The procedure for review by the ENGINEER will include the following as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall first make written application to ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified and be suited to the same use as that specified. The application will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute.

6.7.1.3 **CONTRACTOR's Expense:** All data to be provided by CONTRACTOR in support of any proposed "or-equal" or substitute item will be at CONTRACTOR's expense.

6.7.2 **Substitute Construction Methods or Procedures:** If a specific means, method, technique, sequence or procedure of construction is shown or indicated in an expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.7.1.2.

6.7.3 **ENGINEER's Evaluation:** ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.7.1.2 and 6.7.2. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized without ENGINEER's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any "or-equal" or substitute. ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitutes proposed or submitted by CONTRACTOR pursuant to paragraphs 6.7.1.2 and 6.7.2 and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER accepts a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the changes of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute item.

6.8 **Concerning Subcontractors, Suppliers and Others:**

6.8.1 CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and ENGINEER as indicated in paragraph 6.8.2), whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection. CONTRACTOR shall not be required to employ any subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

6.8.2 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials or equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by OWNER and ENGINEER, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's or ENGINEER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute, the Contract Price will be adjusted by the

difference in the cost occasioned by such substitution and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER or ENGINEER of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or ENGINEER to reject **defective** Work.

6.9 CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other person or organization any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor. Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

6.9.1 CONTRACTOR shall be solely responsible for scheduling and coordinating the Work or Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR. CONTRACTOR shall require all Subcontractors, Suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with the ENGINEER through CONTRACTOR.

6.10 The divisions and sections of the Specifications and the identifications of any drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

6.11 All Work performed by CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insureds on the property insurance provided in paragraph 54.5. the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants and all other additional insureds for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

Patent Fees and Royalties:

6.12 CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents.

Permits:

6.13 Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

Laws and Regulations:

6.14 CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to

furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

6.14.1 If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses and damages caused by, arising out of or resulting therefrom: however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR or CONTRACTOR's obligations under paragraph 3.3.2.

Taxes:

6.15 CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work..

Use of Premises:

6.16 CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any adjacent land or areas, resulting from the performance of the Work. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant and anyone directly or indirectly employed by any of them from and against all claims costs, losses and damages arising out of or resulting from any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

6.17 During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery and surplus materials. CONTRACTOR shall leave the site clean and ready for occupancy by OWNER at Substantial Completion of the Work.. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

6.18 CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

Record Documents:

6.19 CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples and Shop Drawings will be delivered to ENGINEER for OWNER.

Safety and Protection:

6.20 CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.20.1 all persons on the Work site or who may be affected by the Work;

6.20.2 all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

6.20.3 other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for safety of persons or property or to protect them from damage, injury of loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.20.2. or 6.20.3. caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant or anyone employed by any of them or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier or other person or organization directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.13. that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

Safety Representative:

6.21 CONTRACTOR shall designate a qualified and experienced safety representative at the site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

Hazard Communication Programs:

6.22 CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in accordance with Laws or Regulations.

Emergencies:

6.23 In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER or ENGINEER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued to document the consequences of such action.

6.24 **Shop Drawings and Samples:**

6.24.1 CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the accepted schedule of Shop Drawings and Sample submittals (see paragraph 2.9.). All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to shown ENGINEER the materials and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.26.

6.24.2 CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with said accepted schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.26. The numbers of each Sample to be submitted will be as specified in the Specifications.

6.25 **Submittal Procedures:**

6.25.1 Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

6.25.1.1 all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto,

6.25.1.2 all materials with respect to intended use, fabrication, shipping, handling storage, assembly and installation pertaining to the performance of the Work, and

6.25.1.3 all information relative to CONTRACTOR's sole responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.

CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

6.25.2 Each submittal will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

6.25.3 At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

6.26 ENGINEER will review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals accepted by ENGINEER as required by paragraph 2.9. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER's review and approval will not extend to means, methods, techniques, sequences or procedures of construction (except where a particular means, method, technique, sequence or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER, and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.27 ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission as required by paragraph 6.25.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.25.1.

6.28 Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submissions accepted by ENGINEER as required by paragraph 2.9, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

Continuing the Work:

6.29 CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.5 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.30 **CONTRACTOR's General Warranty and Guarantee:**

6.30.1 CONTRACTOR warrants and guarantees to OWNER, ENGINEER and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

6.30.1.1 abuse, modification or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors or Suppliers; or

6.30.1.2 normal wear and tear under normal usage.

6.30.2 CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

6.30.2.1 observations by ENGINEER;

6.30.2.2 recommendation of any progress or final payment by ENGINEER;

6.30.2.3 the issuance of a certificate of Substantial Completion or any payment by OWNER to CONTRACTOR under the Contract Documents;

6.30.2.4 use or occupancy of the Work or any part thereof by OWNER;

6.30.2.5 any acceptance by OWNER or any failure to do so;

6.30.2.6 any review and approval of Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 14.13;

6.30.2.7 any inspection, test or approval by others; or

6.30.2.8 any correction of defective Work by OWNER.

Indemnification:

6.31 To the fullest extent permitted by Laws and Regulations. CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) caused by, arising out of or resulting from the performance of the Work, provided that any such claim, cost, loss or damage: (i) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (ii) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of a person or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such person or entity.

6.32 In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.31 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier or other person or organization under workers' compensation acts, disability benefit acts or other employee benefit acts.

6.33 The indemnification obligations of CONTRACTOR under paragraph 6.31 shall not extend to the liability of ENGINEER and ENGINEER's Consultants, officers, directors, employees or agents caused by the professional negligence, errors or omissions of any of them.

Survival of Obligations:

6.34 All representations, indemnifications, warranties and guarantees made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the Work and termination or completion of the Agreement.

ARTICLE 7 - OTHER WORK

Related Work at Site:

7.1 OWNER may perform other work related to the Project at the site by OWNER's own forces, or let other direct contracts therefore which shall contain General Conditions similar to these, or have other work performed by utility owners. If the fact that such other work is to be performed was not noted in the Contract Documents, then; (i) written notice thereof will be given to CONTRACTOR prior to starting any such other work, and (ii) CONTRACTOR may make a claim therefore as provided in Articles 11 and 12 if CONTRACTOR believes that such performance will involve additional expense to CONTRACTOR or requires additional time and the parties are unable to agree as to the amount or extent thereof.

7.2 CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER if OWNER is performing the additional work with OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage

of materials and equipment and the execution of such other work and shall properly connect and coordinate the Work with theirs. Unless otherwise provided in the Contract Documents. CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

7.3 If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7. CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure so to report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent or nonapparent defects and deficiencies in such other work.

Coordination:

7.4 If OWNER contracts with others for the performance of other work on the Project at the site, the following will be set forth in Supplementary Conditions:

7.4.1 the person, firm or corporation who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified;

7.4.2 the specific matters to be covered by such authority and responsibility will be itemized: and

7.4.3 the extent of such authority and responsibilities will be provided.

Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility in respect of such coordination.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.1 Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2 In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.3 OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.4 and 14.13.

8.4 OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of Subsurface conditions at the site and drawings of physical conditions in existing structures at or contiguous to the site that have been utilized by ENGINEER in preparing the Contract Documents.

8.5 OWNER's responsibilities in respect of purchasing and maintaining liability and property insurance, if any, are set forth in the Supplementary Conditions.

8.6 OWNER is obligated to execute Change Orders as indicated in paragraph 10.4.

8.7 OWNER's responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 13.4.

8.8 In connection with OWNER's right to stop Work or suspend Work, see paragraphs 13.10 and 15.1. Paragraph 15.2 deals with OWNER's right to terminate services of CONTRACTOR under certain circumstances.

8.9 The OWNER shall not supervise, direct or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences or procedures of construction or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

8.10 OWNER's responsibility in respect of undisclosed Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Materials uncovered or revealed at the site is set forth in paragraph 4.5.

8.11 If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

OWNER's Representative:

9.1 ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and ENGINEER.

Visits to Site:

9.2 ENGINEER will make visits to the site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER will endeavor for the benefit of OWNER to determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and on-site observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work. ENGINEER's visits and on-site observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.13, and particularly, but without limitation, during or as a result of ENGINEER's on-site visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work.

Project Representative:

9.3 If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more continuous observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.13 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other person will be as provided in the Supplementary Conditions.

Clarifications and Interpretations:

9.4 ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER or CONTRACTOR believes that a written clarification or interpretation justifies an adjustment in the Contract Price or the Contract Times and the parties are unable to agree to the amount or extent thereof, if any, OWNER or CONTRACTOR may make a written claim therefore as provided in Article 11 or Article 12.

Authorized Variations in Work:

9.5 ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR who shall perform the Work involved promptly. If OWNER or CONTRACTOR believes that a Field Order justifies an adjustment in the Contract Price or the Contract Times and the parties are unable to agree as to the amount or extent thereof, OWNER or CONTRACTOR may make a written claim therefore as provided in Article 11 or 12.

Rejecting Defective Work:

9.6 ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a complete Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.9, whether or not the Work is fabricated, installed or completed.

Shop Drawings, Change Orders and Payments:

9.7 In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraphs 6.24 through 6.28 inclusive.

9.8 In connection with ENGINEER's authority as to Change Orders, see Articles 10,11, and 12.

9.9 In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

Determinations for Unit Prices:

9.10 ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding upon OWNER and CONTRACTOR, unless, within ten days after the date of any such decision, either OWNER or CONTRACTOR delivers to the other and to ENGINEER written notice of intention to appeal from ENGINEER's decision and: (i) an appeal from ENGINEER's decision is taken within the time limits and in accordance with the procedures set forth in Exhibit GC-A, "Dispute Resolution Agreement," entered into between OWNER and CONTRACTOR pursuant to Article 16, or (ii) if no such Dispute Resolution Agreement has been entered into, a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction to exercise such rights or remedies as the appealing party may have with respect to ENGINEER's decision, unless otherwise agreed in writing by OWNER and CONTRACTOR. Such appeal will not be subject to procedures of paragraph 9.11.

Decisions on Disputes:

9.11 ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and Claims under Articles 11 and 12 in respect of changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph. Written notice of each such claim, dispute or other matter will be delivered by the claimant to ENGINEER and the other party to the Agreement promptly (but in no event later than thirty days) after the start of the occurrence or event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within sixty days after the start of such occurrence or event unless ENGINEER allows an additional period of time for the submission of additional or more accurate data in support of such claim, dispute or other matter. The opposing party shall submit any response to ENGINEER and the claimant within thirty days after receipt of the claimant's last submittal (unless ENGINEER allows additional time). ENGINEER will render a formal decision in writing within thirty days after receipt of the opposing party's submittal, if any, in accordance with this paragraph. ENGINEER's written decision on such claim, dispute or other matter will be final and binding upon OWNER and CONTRACTOR unless: (i) an appeal from ENGINEER's decision is taken within the time limits and in accordance with the procedures set forth in EXHIBIT GC-A, "Dispute Resolution Agreement," entered into between OWNER and CONTRACTOR pursuant to Article 16, or (ii) if no such Dispute Resolution Agreement has been entered into, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within thirty days after the date of such decision and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction to exercise such rights or remedies as the appealing party may have with respect to such claim, dispute or other matter in accordance with applicable Laws and Regulations within sixty days of the date of such decision, unless otherwise agreed in writing by OWNER and CONTRACTOR.

9.12 When functioning as interpreter and judge under paragraphs 9.10 and 9.11, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

The rendering of a decision by ENGINEER pursuant to paragraphs 9.10 or 9.11 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.15) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute or other matter pursuant to Article 16.

9.13 **Limitations on ENGINEER's Authority and Responsibilities:**

9.13.1 Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise or performance of any authority or responsibility by ENGINEER shall create, impose or give rise to any duty owed by ENGINEER to CONTRACTOR, any Subcontractor, and Supplier, any other person or organization, or to any surety for or employee or agent of any of them.

9.13.2 ENGINEER will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

9.13.3 ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

9.13.4 ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection, tests, and approvals and Other documentation required to be delivered by paragraph 4.12 will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests and approvals that the results certified indicate compliance with, the Contract Documents.

9.13.5 The limitations upon authority and responsibility set forth in this paragraph 9.13 shall also apply to ENGINEER's Consultants, Resident Project Representative and assistants.

ARTICLE 10 - CHANGES IN THE WORK

10.1 Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work. Such additions, deletions or revisions will be authorized by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

10.2 If OWNER and CONTRACTOR are unable to agree as to the extent, if any, of an adjustment in the Contract Price or an adjustment of the Contract Times that should be allowed as a result of a Work Change Directive, a claim may be made therefore as provided in Article 11 or Article 12.

10.3 CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.5 and 3.6 except in the case of an emergency as provided in paragraph 6.23 or in the case of uncovering Work as provided in paragraph 13.9.

10.4 OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

10.4.1 changes in the Work which are (i) ordered by OWNER pursuant to paragraph 10.1, (ii) required because of acceptance of defective Work under paragraph 13.13 or correcting defective Work under paragraph 13.14, or (iii) agreed to by the parties;

10.4.2 changes in the Contract Price or Contract Times which are agreed to by the parties; and

10.4.3 changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 9.11;

Provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.29.

10.5 If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 11 - CHANGE OF CONTRACT PRICE

11.1 The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at CONTRACTOR's expense without change in the Contract Price.

11.2 The Contract Price may only be changed by a Change Order or by a Written Amendment. Any claim for an adjustment in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than thirty days) after the start of the occurrence or event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after the start of such occurrence or event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the adjustment claimed covers all known amounts to which the claimant is entitled as a result of said occurrence or event. All claims for adjustment in the Contract Price shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this paragraph 11.2.

11.3 The value of any Work covered by a Change Order or of any claim for an adjustment in the Contract Price will be determined as follows:

11.3.1 where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraphs 11.9.1. through 11.9.3. inclusive);

11.3.2 where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 11.6.2):

11.3.3 where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 11.3.2, on the basis of the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 11.6).

Cost of the Work:

11.4 The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5.

11.4.1 Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen and other personnel employed full-time at the site. Payroll costs for employees not employed full-time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, worker's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by OWNER.

11.4.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash

discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3 Payments made by CONTRACTOR to the Subcontractors for Work performed or furnished by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of ENGINEER, which bids, if any, will be accepted. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in paragraphs 11.4, 11.5, 11.6 and 11.7. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4 Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

11.4.5 Supplemental costs including the following:

11.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

11.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof – all in accordance with the terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

11.4.5.4 Sales, consumer, use or similar taxes related to the work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

11.4.5.5 Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

11.4.5.6 Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER), provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the Work.

11.5 The term Cost of the Work shall not include any of the following:

11.5.1 Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.4.1 or specifically covered by paragraph 11.4.4 – all of which

are to be considered administrative costs covered by the CONTRACTOR's fee.

11.5.2 Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

11.5.3 Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

11.5.4 Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 11.4.5.9 above).

11.5.5 Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property. other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

11.6 The CONTRACTOR's fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

11.6.1 a mutually acceptable fixed fee; or

11.6.2 if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

11.6.2.1 for costs incurred under paragraphs 11.4.1 and 11.4.2, the CONTRACTOR's fee shall be fifteen percent;

11.6.2.2 for costs incurred under paragraph 11.4.3, the CONTRACTOR's fee shall be five percent.

11.6.2.3 where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraphs 11.4.1, 11.4.2, 11.4.3 and 11.6.2 is that the Subcontractor who actually performs or furnishes the Work, at whatever tier, will be paid a fee of fifteen percent of the costs incurred by such Subcontractor under paragraphs 11.4.1 and 11.4.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor:

11.6.2.4 no fee shall be payable on the basis of costs itemized under paragraphs 11.4.4, 11.4.5 and 11.5;

11.6.2.5 the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

11.6.2.6 when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 11.6.2.1 through 11.6.2.5, inclusive.

11.7 Whenever the cost of any work is to be determined pursuant to paragraphs 11.4 and 11.5, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

Cash Allowances:

11.8 It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be furnished and performed for such sums as may be acceptable to OWNER and ENGINEER, CONTRACTOR agrees that:

11.8.1 the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

11.8.2 CONTRACTOR's costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances and no demand for additional payment on account of any of the foregoing will be valid.

Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.9 **Unit Price Work:**

11.9.1 Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include

for all Unit Price Work an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER in accordance with paragraph 9.10.

11.9.2 Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

11.9.3 OWNER or CONTRACTOR may make a claim for an adjustment in the Contract Price in accordance with Article 11 if:

11.9.3.1 the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

11.9.3.2 there is no corresponding adjustment with respect to any other item of Work; and

11.9.3.3 if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT TIMES

12.1 The Contract Times (or Milestones) may only be changed by a Change Order or a Written Amendment. Any claim for an adjustment of the Contract Times (or Milestones) shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Times (or Milestones) shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Times (or Milestones) will be valid if not submitted in accordance with the requirements of this paragraph 12.1.

12.2 All time limits stated in the Contract Documents are of the essence of the Agreement.

12.3 Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a claim is made therefore as provided in paragraph 12.1. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions or acts of God. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.4 Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall OWNER be liable to CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from (i) delays caused by or within the control of CONTRACTOR, or (ii) delays beyond the control of both parties including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

ARTICLE 13 - TESTS AND INSPECTION: CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.1 **Notice of Defects:** Prompt notice of all defective Work of which OWNER or ENGINEER have actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected or accepted as provided in this Article 13.

Access to Work:

13.2 OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's site safety procedures and programs so that they may comply therewith as applicable.

Tests and Inspections:

13.3 CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

13.4 OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

13.4.1 for inspections, tests or approvals covered by paragraph 13.5 below:

13.4.2 that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.9 below shall be paid as provided in said paragraph 13.9; and

13.4.3 as otherwise specifically provided in the Contract Documents.

13.5 If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection, or approval. CONTRACTOR shall also be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work, or of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work.

13.6 If any Work (or the work of others) that is to be inspected, tested or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

13.7 Uncovering Work as provided in paragraph 13.6 shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

Uncovering Work:

13.8 If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

13.9 If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all claims, costs, losses and damages caused by, arising out of or resulting from such uncovering, exposure, observation, inspection and testing and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefore as provided in Article 11. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement and reconstruction; and, if the parties are unable to agree as to the amount or extent therefore, CONTRACTOR may make a claim therefore as provided in Articles 11 and 12.

OWNER May Stop the Work:

13.10 If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents. OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the

Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any surety or other party.

Correction or Removal of Defective Work:

13.11 If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site and replace it with Work that is not defective. CONTRACTOR shall pay all claims, costs, losses and damages caused by or resulting from such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.12 **Correction Period:**

13.12.1 If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instruction: (i) correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with Work that is not defective, and (ii) satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in any emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all claims, costs, losses and damages caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

13.12.2 In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

13.12.3 Where defective Work (and damage to other Work resulting therefrom) has been corrected, removed or replaced under this paragraph 13.12, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

Acceptance of Defective Work:

13.13 If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all claims, costs, losses and damages attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness). If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefore as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

OWNER May Correct Defective Work:

13.14 If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.11, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representative, agents and employees, OWNER's other contractors and ENGINEER and ENGINEER's Consultants access to the site to enable OWNER to exercise the rights and remedies under this paragraph. All claims, costs, losses and damages incurred or sustained by OWNER in exercising such rights and remedies will be charged against CONTRACTOR and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to

an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefore as provided in Article 11. Such claims, costs, losses and damages will include but not be limited to all costs of repair or replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's defective Work. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies hereunder.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

Schedule of Values:

14.1 The schedule of values established as provided in paragraph 2.9 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

Application for Progress Payment:

14.2 At least twenty days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER's interest therein, all of which will be satisfactory to OWNER. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

CONTRACTOR's Warranty of Title:

14.3 CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

Review of Applications for Progress Payment:

14.4 ENGINEER will, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of the last sentence of paragraph 14.7) become due and when due will be paid by OWNER to CONTRACTOR.

14.5 ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's on-site observations of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

14.5.1 the Work has progressed to the point indicated.

14.5.2 the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.10, and to any other qualifications stated in the recommendation), and

14.5.3 the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

14.6 ENGINEER's recommendation of any payment, including final payment, shall not mean that

ENGINEER is responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of Work, or for any failure of CONTRACTOR to perform or furnish Work in accordance with the Contract Documents.

14.7 ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.5. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

14.7.1 the Work is defective, or completed Work has been damaged requiring correction or replacement.

14.7.2 the Contract Price has been reduced by Written Amendment or Change Order.

14.7.3 OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.14. or

14.7.4 ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1 through 15.2.4 inclusive.

OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

14.7.5 claims have been made against OWNER on account of CONTRACTORs performance or furnishing of the Work.

14.7.6 liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens,

14.7.7 there are other items entitling OWNER to a set-off against the amount recommended, or

14.7.8 OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.7.1 through 14.7.3 or paragraphs 15.2.1 through 15.2.4 inclusive;

but OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

Substantial Completion:

14.8 When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefore. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within fourteen days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefore. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said fourteen days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

14.9 OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

Partial Utilization:

14.10 Use by OWNER at OWNER's option of any substantially completed part of the Work which: (i) has specifically been identified in the Contract Documents, or (ii) OWNER, ENGINEER and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

14.10.1 OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefore. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraphs 14.8 and 14.9 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

14.10.2 No occupancy or separate operation of part of the Work will be accomplished prior to compliance with the requirements of paragraph 5.13 in respect of property insurance.

Final Inspection:

14.11 Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

Final Application for Payment:

14.12 After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered in accordance with the Contract Documents all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance required by Article 5, certificates of inspection, marked-up record documents (as provided in paragraph 6.19) and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Article 5, (ii) consent of the surety, if any, to final payment, and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu of such releases or waivers of Liens and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and (ii) all payrolls, material and equipment bills and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

Final Payment and Acceptance:

14.13 If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the

Application to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.15 Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. Thirty days after the presentation to OWNER of the Application and accompanying documentation, in appropriate form and substance and with ENGINEER's recommendation and notice of acceptability, the amount recommended by ENGINEER will become due and will be paid by OWNER to CONTRACTOR

14.14 If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in Article 5, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

Waiver of Claims:

14.15 The making and acceptance of final payment will constitute:

14.15.1 a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.11, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

14.15.2 a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

OWNER May Suspend Work:

15.1 At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes an approved claim therefore as provided in Articles 11 and 12.

OWNER May Terminate:

15.2 Upon the occurrence of any one or more of the following events:

15.2.1 if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.9 as adjusted from time to time pursuant to paragraph 6.6);

15.2.2 if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

15.2.3 if CONTRACTOR disregards the authority of ENGINEER; or

15.2.4 if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety, if any,) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses and damages sustained by

OWNER arising out of or resulting from completing the Work such excess will be paid to CONTRACTOR. If such claims, costs, losses and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and when so approved by ENGINEER incorporated in a Change Order, provided that when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

15.3 Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.4 Upon seven days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Agreement. In such case, CONTRACTOR shall be paid (without duplication of any items):

15.4.1 for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

15.4.2 for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

15.4.3 for all claims, costs, losses and damages incurred in settlement of terminated contracts with Subcontractors, Suppliers and other; and

15.4.4 for reasonable expenses directly attributable to termination.

CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

CONTRACTOR May Stop Work or Terminate:

15.5 If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within thirty days after it is submitted or OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Agreement and recover from OWNER payment on the same terms as provided in paragraph 15.4. In lieu of terminating the Agreement and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within thirty days after it is submitted, or OWNER has failed for thirty days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may upon seven day's written notice to OWNER and ENGINEER stop the Work until payment of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.5 are not intended to preclude CONTRACTOR from making claim under Articles 11 and 12 for an increase in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping Work as permitted by this paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

If and to the extent that OWNER and CONTRACTOR have agreed on the method and procedure for resolving disputes between them that may arise under this Agreement, such dispute resolution method and procedure, if any, shall be as set forth in Exhibit GC-A, "Dispute Resolution Agreement," to be attached hereto and made a part hereof. If no such agreement on the method and procedure for resolving such disputes has been reached, and subject to the provisions of paragraphs 9.10, 9.11, and 9.12, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 - MISCELLANEOUS

Giving Notice:

17.1 Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

Computation of Times:

17.2 When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.2.1 A calendar day of twenty-four hours measured from midnight to the next midnight will constitute a day.

Notice of Claim:

17.3 Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other part or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 17.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

Cumulative Remedies:

17.4 The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.12, 6.16, 6.30, 6.31, 6.32, 13.1, 13.12, 13.14, 14.3 and 15.2 and all of the rights and remedies available to OWNER and ENGINEER thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply.

Professional Fees and Court Costs Included:

17.5 Whenever reference is made to "claims, costs, losses and damages," it shall include in each case, but not be limited to, all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs.

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract and other provisions of the Contract Documents as indicted below. All provisions which are not so amended or supplemented remain in full force and effect.

SC-1 - DEFINITIONS

The term used in these Supplementary Conditions which are defined in the Standard General Conditions of the Construction Contract have the meanings assigned to them in the General Conditions.

SC-1.18

ENGINEER's Consultant - the following list of independent professional associates and consultants are considered the ENGINEER's consultant for this Construction Contract:

Ocean and Coastal Consultants
Engineering, P.C.
35 Corporate Drive
Trumball, Connecticut 06611

Contact: Azure Dee Sleicher, P.E.
Phone: (203) 268-5007
Fax: (203) 268-8821

ARTICLE 2 - PRELIMINARY MATTERS

SC-2.2

Amend the first sentence of paragraph 2.2 of the General Conditions to read as follows:

OWNER shall furnish to CONTRACTOR up to six copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work.

And as so amended paragraph 2.2 remains in effect.

SC-2.3

Amend the third sentence of paragraph 2.3 of the General Conditions to read as follows:

> In no event will the Contract Times commence to run later than the seventy-fifth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

And as so amended paragraph 2.3 remains in effect.

SC-2.7

Amend the first sentence of paragraph 2.7 of the General Conditions to read as follows:

> Before any work at the site is started, CONTRACTOR shall deliver to OWNER with copies to each additional insured identified in the Supplementary Conditions, Certificates of Insurance (and other evidence of insurance which OWNER or any other additional insured may reasonably request) which CONTRACTOR is required to purchase and maintain in accordance with paragraphs 5.4, 5.6, and 5.7.

And as so amended paragraph 2.7 remains in effect.

SC-2.8

Amend the first segment of the first sentence of paragraph 2.8 of the General Conditions to read as follows:

> Within 20 days after the Contract Times commence to run, but before any work at the site is started,...

And as so amended paragraph 2.8 remains in effect.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

SC-4.2.1.

Amend the first sentence of paragraph 4.2.1 of the General Conditions to read as follows:

> Reports and drawings: Reference is made to the 'Information Available to Bidders' for identification of:

And as so amended paragraph 4.2.1 remains in effect.

SC-4.2.2

Amend the second sentence of paragraph 4.2.2 of the General Conditions to read as follows:

> Such "technical data" is identified in the Information Available to Bidders.

And as so amended paragraph 4.2.2 remains in effect.

SC-4.3.1

Amend the second sentence of paragraph 4.3.1 of the General Conditions to read as follows:

Unless it is otherwise expressly provided in the "Information Available to Bidders:"

And as so amended paragraph 4.3.1 remains in effect.

ARTICLE 5 - BONDS AND INSURANCE

New Bond and Insurance Provisions:

SC-5

Article 5 of the General Conditions is hereby deleted in its entirety and replaced with the following provisions.

Performance and Payment Bonds:

SC 5.1

CONTRACTOR shall furnish Performance and Payment Bonds, each in an amount of at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect, at a minimum, for one year after the date when the final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents.

SC 5.1.1

All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended) by the U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

SC 5.2

If the surety on any Bond furnished by CONTRACTOR files a petition in bankruptcy, becomes insolvent, is reasonably likely to become insolvent in the near future, or its right to do business is terminated in any state where any part of the Project is located, or it ceases to meet the requirements of paragraph 5.6, CONTRACTOR shall within ten days thereafter substitute another bond and surety, both of which must be acceptable to OWNER

Licensed Sureties and Insurers:

SC 5.3

All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bond or insurance policies for the limits and coverages required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

CONTRACTOR'S Liability Insurance:

SC 5.4

CONTRACTOR shall, at his own cost and expense, take out and maintain for the life of the Project and cause his Subcontractors to obtain and maintain for the life of their subcontracts, the following insurance:

Commercial General Liability Insurance:

SC 5.4.1

Commercial General Liability (CGL) with limits of insurance of not less than:

Limits of Liability:

$1,000,000	Each Occurrence
$2,000,000	General Aggregate Limit (Per Project – CG 25 0311/85)
$2,000,000	Products/Completed Operations
$1,000,000	Advertising/Personal Injury
$ 10,000	Premises Medical Payments

CONTRACTOR's CGL policy shall include the following coverages: Products/Completed Operations, Contractual Liability and Explosion, Collapse and Underground Damage.

OWNER, ENGINEER & the New York State Department of Environmental Conservation shall be included as insureds on the CONTRACTOR's CGL, using ISO Additional Insured Endorsement CG 20 10 11 85 or an endorsement providing equivalent coverage to the additional insureds. The CGL insurance for the additional insureds shall be as broad as the coverage provided for the named insured CONTRACTOR. It shall apply as primary and non-contributing insurance before any insurance maintained by the additional insureds.

CONTRACTOR shall maintain CGL coverage for itself and all additional insureds for the duration of the project and maintain Completed Operations coverage for itself and all additional insureds for at least 3 years after completion of the work.

Automobile Liability Insurance:

SC 5.4.2

Business Automobile Liability (AL) with limits of insurance of not less than $1,000,000, Combined Single Limit. AL coverage must include coverage for liability arising out of all owned, leased, hired and non-owned automobiles.

OWNER and ENGINEER shall be included as additional insureds on the CONTRACTOR's AL policy. The AL coverage for the additional insured shall apply as primary and non-contributing insurance before any insurance maintained by the additional insureds.

Workers' Compensation and Employer's Liability Insurance:

SC 5.4.3

Workers Compensation (WC) as required by statute in the state where the Project is located.

Employer's Liability (EL) with limits of insurance of not less than $500,000 each accident for bodily injury by accident and $500,000 each employee for injury by disease.

The policy shall include an All States coverage endorsement. Where applicable, the U.S. Longshore and Harbor workers Compensation Act Endorsement shall be attached to the policy. Where applicable, the Maritime Coverage Endorsement shall be attached to the policy. Where applicable, the Stop Gap Endorsement shall be attached to the policy.

Commercial Umbrella Liability Insurance:

SC 5.4.4

Commercial Umbrella Liability (UL) with limits of insurance of not less than $5,000,000.

UL coverage must include as additional insureds all entities that are additional insureds on the CGL and the AL. The UL coverage for additional insureds shall apply as primary and non-contributing insurance before any other insurance or self-insurance, including any deductible, maintained by, or provided to, the additional insureds other than the CGL, AL and EL coverage maintained by the Contractor.

Builder's Risk Insurance:

SC 5.4.5

CONTRACTOR shall purchase and maintain Builder's Risk insurance upon the Work at the site in the amount of the full replacement cost thereof (subject to a deductible of no more than $500.00). This Builder's Risk insurance shall:

SC 5.4.5.1 Include the interests of OWNER, CONTRACTOR, SUBCONTRACTORS, ENGINEER a ENGINEER's consultants, the New York State Department of Environmental Conservation, and any other person or entities identified in the Supplementary Conditions each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

SC 5.4.5.2 Be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least insure for physical loss and damage to the Work, temporary buildings, falsework and Work in transit and shall insure against at least the following perils: fire, lightning, extended coverage, theft, vandalism, malicious mischief, water damage, earthquake, collapse, debris removal and demolition occasioned by enforcement of Laws and Regulations and such other perils as may be specifically required in the Supplementary Conditions.

SC 5.4.5.3 Include expenses incurred in the repair or replacement of any insured property (including, but not limited to, fees and charges of the ENGINEER and architect)

SC 5.4.5.4 Cover materials and equipment in transit for incorporation in the Work or stored at the site or at another location provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

SC 5.4.5.5 Be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with thirty days written notice to each insured or additional insured to whom a Certificate of Insurance has been issued.

Pollution Liability Coverage:

SC 5.4.6

Pollution Legal Liability (PLL) with limits of Insurance of not less than $1,000,000 each occurrence and $2,000,000 annual aggregate. The maximum deductible

shall not exceed $25,000.
CONTRACTOR's PPL policy shall include coverage for damage to soil, surface water or plant or animal caused by the discharge, dispersal, release or escape of any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, medical waste and waste materials into or upon land, or any structure on land, the atmosphere or any watercourse or body of water, including groundwater, provided such conditions are not naturally present in the environment in the concentration or amounts discovered.

OWNER, ENGINEER and the New York State Department of Environmental Conservation shall be included as insureds on the CONTRACTOR'S PPL, using ISO Additional Insured Endorsement CG 20 10 11 85 or an endorsement providing equivalent coverage to the additional insureds. The PPL insurance for the additional insureds shall be as broad as the coverage provided for the named insured CONTRACTOR. It shall apply as primary and non-contributing insurance before any insurance maintained by the additional insureds.

SC. 5.4.7

Owner's Protective Liability Insurance ("OPL") issued to and covering the liability for damages imposed by law upon the OWNER, ENGINEER or the New York State Department of Environmental Conservation and all of their employees, with respect to all operations under the agreement with CONTRACTOR or it Subcontractors, including omissions and supervisory acts of the OWNER, ENGINEER or the New York State Department of Environmental Conservation. The OPL coverage limits shall be $1,000,000 per occurrence with a $2,000,000 aggregate. The OPL shall be in effect prior to the commencement of Contractor's performance under this agreement and shall be maintained until final acceptance of the project by OWNER.

Waiver of Subrogation:

SC 5.5

CONTRACTOR waives all rights against OWNER, ENGINEER, the New York State Department of Environmental Conservation, and their agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the CGL, UL, AL or WC and EL insurance maintained per the requirements set forth above.

Required Insurance Carriers:

SC 5.6

All of the above insurance requirements shall be provided by an insurance carrier licensed to business in the state where the project is located and have an A.M. Best Rating of A- or better as determined by the most recent A.M. Best Publication.

Certificates of Insurance:

SC 5.7

Within five business days of the Contract being executed, CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, Certificates of Insurance (and other evidence of insurance reasonably requested by the OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain in accordance with the Contract Documents. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, Certificates of Insurance (and other evidence of insurance reasonably requested by the CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain in accordance with the Contract Documents.

SC 5.7.1

Each Certificate of Insurance shall be endorsed to provide for 30 days notice of cancellation, non-renewal or material change to the Certificate Holder and each additional insured except where Laws or Regulations require otherwise. The endorsement shall read: "No cancellation of or change in this policy shall become effective until after thirty (30) days notice by issuing company."

Effect of Insurance Coverage; Claims in Excess of Coverage:

SC 5.8

Upon failure of the CONTRACTOR to furnish, deliver and maintain such insurance as required above, this Contract may, at the election of the OWNER, be forthwith declared suspended, discontinued or terminated. Failure of the CONTRACTOR to take out or maintain or the taking out or maintenance of any required insurance, shall not relieve the CONTRACTOR's liability under the Contract nor shall the insurance requirements be construed to limit the obligations of indemnification or contribution.
SC 5.8.1

In the event that claims in excess of the amounts provided by insurance are filed by reason of any operations under the Contract, the amount of excess of such claims, or any portion thereof, may be withheld from payment due to or become due the CONTRACTOR until such time as the CONTRACTOR shall furnish additional security covering such claims as may be determined by the OWNER.

Waiver of Rights:

SC 5.9

OWNER and CONTRACTOR intend that policy purchased and maintained pursuant to paragraphs 5.4.5 will protect OWNER, CONTRACTOR, SUBCONTRACTORS, ENGINEER, ENGINEER's consultants and all other persons or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds in such policies and will provide primary coverage for all losses and damages caused by the perils covered thereby. This policy shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder.

Receipt and Application of Insurance Proceeds:

SC 5.10

Any insureds' loss under the policy of insurance required by paragraph 5.4.5 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and paragraph 5.8. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order or written Amendment.

SC 5.10.1

OWNER as fiduciary shall have the power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for proper performance of such duties.

Disability Benefits:

SC 5.11

Where and as required by law, CONTRACTOR will provide disability benefits during the duration of the contract for the employees required to be covered.

Acceptance of Bonds and Insurance; Option to Replace:

SC 5.12

If either party (OWNER or CONTRACTOR) has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within ten days after receipt of the certificates (or other evidence requested) required by paragraph 2.7. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

Partial Utilization – Property Insurance:

SC 5.13

If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.10; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITY

SC-6.2.1

Add a new paragraph immediately after paragraph 6.2 of the General Conditions which reads as follows:

Contractor shall observe recognized safety standards, such as those of the National Fire Protection Association and the American National Standards Institute, ensure safety on the site, through safe work practices and an effective safety management program, maintain safe equipment and material storage and employ good site housekeeping and fire prevention practices, establish a safe traffic flow for pedestrians and vehicles and employ measures to prevent falling or collapsing items in their vicinity, and require that contractors make their subcontractors follow the same safe work practices.

SC-6.7

Add the following language at the end of the first sentence of paragraph 6.7 of the General Conditions:

> Whenever the term "or-equal" is followed by the words "requiring prior approval" in the specification or description of an item of material or equipment, the CONTRACTOR's proposed equivalent will be submitted for ENGINEER's approval as described in paragraph 10 in the Instructions to Bidders.

And as so amended paragraph 6.7 remains in effect.

SC-6.8

Add a new paragraph immediately before paragraph 6.8.1 of the General conditions which is to read as follows:

> The CONTRACTOR shall submit a list of SUBCONTRACTORS and major Material Suppliers for the OWNER's approval within five days of the Notice of Award. An OWNER or ENGINEER, who after due investigation, reasonably believes that a Subcontractor, Supplier, other person or organization is suspended, debarred or has otherwise been declared ineligible to perform this contract, may request that the Successful Bidder submit an acceptable substitute Subcontractor, Supplier, person or organization.

And as so amended paragraph 6.8 remains in effect.

SC-6.15

Delete paragraph 6.15 in its entirety and substitute the following:

> "The OWNER is exempt from payment of Sales and Compensating Use Taxes of the State of New York and of its cities and counties on all materials and supplies sold to the OWNER pursuant to the provisions of this Contract. Those tools, machinery, and equipment or other property leased by or to the CONTRACTOR or a SUBCONTRACTOR, or supplies and materials which even though they are consumed, are not incorporated into the completed project are not tax exempt. The CONTRACTOR and his SUBCONTRACTORS shall be responsible to pay all applicable taxes, including Sales and Compensating Use Taxes, on such leased tools, machinery, and equipment, or other property and upon all such unincorporated supplies and materials.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

SC-9.3

Add thirty-five (35) new paragraphs immediately after the last paragraph in section 9.3 of the General Conditions which are to read as follows:

9.3.1 ENGINEER will furnish a Resident Project Representative, assistants and other field staff as needed, to assist ENGINEER in observing performance of the Work. The Resident Project Representative is to observe and inspect, in the OWNER'S interest, the materials furnished and the work done as the work progresses in order to insure full and complete compliance with the contract and to verify quantities of work completed.

9.3.2 OWNER may also designate one of its employees to represent OWNER for these purposes.

9.3.3 ENGINEER, Resident Project Representative, OWNER and all such other persons referred to shall have unrestricted access to all parts of the Work. CONTRACTOR shall cooperate by supplying necessary facilities and assistance required by above persons to carry out their work of observation and inspection.

9.3.4 It is not the function of the ENGINEER, Resident Project Representative or OWNER to supervise or direct the manner in which the work to be done under this CONTRACT is carried on or conducted. The ENGINEER, Resident Project Representative or OWNER is not responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the work, and they will not be responsible for the CONTRACTOR'S failure to carry out the work in accordance with the Contract Documents.

Nevertheless, CONTRACTOR agrees that any method or procedure, which in the opinion of the ENGINEER or OWNER does not achieve the required results or quality of the work specified, shall be discontinued immediately upon the order of the ENGINEER.

9.3.5 All communications between CONTRACTOR and ENGINEER or CONTRACTOR and OWNER are to be through the Resident Project Representative.

9.3.6 Duties and Responsibilities of Resident Project Representative (RPR):

(a) ENGINEER'S agent at the site; will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding RPR's actions. RPR's dealings in matters pertaining to the on-site work shall in general be with ENGINEER and CONTRACTOR keeping OWNER advised as necessary. RPR'S dealings with SUBCONTRACTORS shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner with the knowledge of and under direction of Engineer.

(b) Review progress schedule, schedule of Shop Drawing submittals and schedule of values prepared by CONTRACTOR and consult with ENGINEER concerning acceptability.

(c) Attend meetings with CONTRACTOR, such as pre-construction conferences, progress meetings, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.

(d) Serve as ENGINEER's and OWNER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent and assist in understanding the intent of the Contract Documents.

(e) Advise ENGINEER and CONTRACTOR of the commencement of any Work requiring a Shop Drawing or sample if the submittal has not been approved by ENGINEER.

(f) Conduct on-site observations of the Work in progress to assist ENGINEER in determining if the Work is in general proceeding in accordance with the Contract Documents. Report to ENGINEER whenever RPR believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise ENGINEER of Work that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

(g) Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed and transmit to CONTRACTOR clarifications and interpretations as issued by ENGINEER.

(h) Consider and evaluate CONTRACTOR's suggestions for modifications in Drawings or Specifications and report with RPR's recommendations to ENGINEER. Transmit to CONTRACTOR decisions as issued by ENGINEER.

(i) Maintain orderly files for correspondence, reports of job conferences, Shop Drawings and samples, reproductions of original Contract Documents including all Work Directive Changes, Addenda, Change Orders, Field Orders, additional Drawings issued subsequent to the execution of the Contract, ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, and other Project related documents.

(j) Keep a diary or log book, recording CONTRACTOR hours on the job site, weather conditions, data relative to questions of Work Directive Changes, Change Orders or Changed conditions, list of job site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to ENGINEER.

(k) Record names, addresses and telephone numbers of all CONTRACTORS, SUBCONTRACTORS and major suppliers of materials and equipment.

(l) Furnish ENGINEER periodic reports as required of progress of the Work and of CONTRACTOR's compliance with the progress schedule and schedule of Shop Drawing and sample submittals.

(m) Draft proposed Change Orders and Work Directive Changes, obtaining backup material from CONTRACTOR and recommend to ENGINEER and OWNER Change Orders, Work Directive Changes, and Field Orders.

(n) Report immediately to ENGINEER and OWNER upon the occurrence of any accident.

(o) Review applications for payment with CONTRACTOR for compliance with the established procedure for their submission and forward with

recommendations to ENGINEER, noting particularly the relationship of the payment requested to the schedule of values, Work completed and materials and equipment delivered at the site but not incorporated in the Work.

(p) During the course of the Work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by CONTRACTOR are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to ENGINEER for review and forwarding to OWNER prior to final payment for the work.

(q) Before ENGINEER issues a Certificate of Substantial Completion, submit to CONTRACTOR a list of observed items requiring completion or correction.

(r) Conduct final inspection in the company of ENGINEER, OWNER and CONTRACTOR and prepare a final list of items to be completed or corrected.

(s) Observe that all items on final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance.

9.3.7 Limitations of Authority of Resident Project Representative (RPR):

(a) Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment, unless authorized by ENGINEER.

(b) Shall not exceed limitations of ENGINEER's authority as set forth in the Contract Documents.

(c) Shall not undertake any of the responsibilities of CONTRACTOR, SUBCONTRACTORS or CONTRACTOR's superintendent.

(d) Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required by the Contract Documents.

(e) Shall not advise on, issue directions regarding or assume control over safety precautions and programs in connection with the Work.

(f) Shall not accept Shop Drawing or sample submittals from anyone other than Contractor.

9.3.8 The ENGINEER shall have the authority to reject any work, or materials, or any part thereof, which does not in his opinion conform to the plans, drawings, specifications and contract, and it shall be permissible for him to do so at any time during the progress of the work and until its acceptance.

No material of any kind shall be used upon the work until it has been inspected and accepted by the ENGINEER. All materials rejected shall be removed immediately from the work and not again offered for inspection. Any materials or workmanship found at any time to be defective or not of the quality or character required by the plans and specifications shall be remedied at once regardless of previous inspection.

Such inspection shall not relieve the CONTRACTOR from any obligation to perform said work strictly in accordance with the plans and specifications and work not so constructed shall be removed and made good by the CONTRACTOR at his own expense, and free from all expense to the OWNER whenever so ordered by the OWNER without reference to any previous oversight or error in inspection.

SC-9.10

Amend the second sentence of paragraph 9.10 of the General Conditions by striking out the following words:

(i) An appeal from ENGINEER's decision is taken within the time limits and in accordance with the procedures set forth in Exhibit GC-A, "Dispute Resolution Agreement," entered into between OWNER and CONTRACTORS pursuant to Article 16, or (ii) if no such dispute resolution agreement has been entered into.

And as so amended paragraph 9.10 remains in effect.

SC-9.11

Amend the sixth sentence of paragraph 9.11 of the General Conditions by striking out the following words:

(i) an appeal from ENGINEER's decision is taken within the time limits and in accordance with the procedures set forth in Exhibit GC-A "Dispute Resolution Agreement," entered into between OWNER and CONTRACTOR pursuant to Article 16, or (ii) if no dispute resolution agreement has been entered into.

And as so amended paragraph 9.11 remains in effect.

SC-9.12

Amend the second sentence of paragraph 9.12 of the General Conditions by striking out the following words:

Pursuant to Article 16.

And as so amended paragraph 9.12 remains in effect.

ARTICLE 13 – FEDERAL AIDED NYS TRANSPORTATION PROJECTS

SC-13.12

Delete Paragraphs 13.12.1, 13.12.2 and 13.12.3.

ARTICLE 14 - PAYMENT TO CONTRACTOR AND COMPLETION

SC-14.4

Amend paragraph 14.4 of the General Conditions by charging the last sentence to read as follows:

OWNER shall promptly pay the CONTRACTOR'S Application for Payment. Where the OWNER is other than the City of New York, the term "promptly pay" shall mean payment within thirty days, excluding legal holidays, of receipt of an Application for Payment unless such Application is not approved. Notwithstanding the foregoing, where the OWNER is other than the City of New York and is a municipal corporation which requires an elected official to approve progress payments, "promptly pay" shall mean payment within forty-five days, excluding legal holidays, of receipt of an approved Application for Payment.

and so amended, paragraph 14.4 remains in effect.

SC-14.10

Add a new unnumbered paragraph immediately after paragraph 14.10 of the General Conditions which is to read as follows:

OWNER may at any time request CONTRACTOR in writing to permit OWNER to take over operation of any such part of the work although it is not substantially complete. A copy of such request will be sent to ENGINEER and within a reasonable time thereafter OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not object in writing to OWNER and ENGINEER that such part of the Work is not ready for separate operation by OWNER, ENGINEER will finalize the list of items to be completed or corrected and will deliver such lists to OWNER and CONTRACTOR together with a written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance, warranties and guarantees for that part of the Work which will become binding upon OWNER and CONTRACTOR at the time when OWNER takes over such operation (unless they shall have otherwise agreed in writing and so informed ENGINEER). During such operation and prior to Substantial Completion of such part of the Work, OWNER shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related Work.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

SC-15.2

Add additional subparagraphs to paragraph 15.2 of the General Conditions as follows:

15.2.5 if CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

15.2.6 if a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

15.2.7 if CONTRACTOR makes a general assignment for the benefit of creditors;

15.2.8 if a trustee, receiver, custodian, or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR'S creditors;

15.2.9 if CONTRACTOR admits in writing an inability to pay its debts generally as they become due.

ARTICLE 16 - DISPUTE RESOLUTION

SC-16

Delete Article 16 of the General Conditions in its entirety.

ARTICLE 17 - MISCELLANEOUS

SC-17

Amend the first sentence of paragraph 17.5 of the General Conditions by striking out the following words:

Or arbitration.

And as so amended paragraph 17.5 remains in effect.

SC-17.6 LABOR RECORDS AND SCHEDULES

Add new paragraph immediately after paragraph 17.5 of the General Conditions which is to read as follows:

> The Department of Jurisdiction on such public work shall require all CONTRACTORS and SUBCONTRACTORS to keep the following records on the site of the public work project on which such CONTRACTORS, and SUBCONTRACTORS are engaged:

17.6.1 Record of hours worked by each worker, laborer, and mechanic on each day.

17.6.2 Record of days worked each week by each worker, laborer, and mechanic.

17.6.3 Schedule of occupation or occupations at which each worker, laborer, and mechanic on the project is employed during each workday and week.

17.6.4 Schedule of hourly wage rates and supplements paid to each worker, laborer, and mechanic for each occupation.

SC-17.7 WAGE SCHEDULES

Add a new paragraph immediately after paragraph 17.6.4 of the General Conditions which is to read as follows:

> 17.7 Pursuant to Sections 220.3 and 220-d of the Labor Law, each laborer, worker, or mechanic employed by the CONTRACTOR, SUBCONTRACTOR, or other person shall be paid not less than the prevailing rate of wages for a legal day's work and shall be provided supplements not less than the prevailing supplements as determined by the Industrial Commissioner.

17.7.1 The CONTRACTOR and every SUBCONTRACTOR shall post in a prominent and accessible place on the site of the work a legible statement of all wage rates and supplements as specified in the CONTRACT to be paid or provided, as the case may be, for the various classes of mechanics, workers, and laborers employed on the work.

17.7.2 The OWNER does not represent or warrant that the accompanying schedule of wage rates and supplements with the classification of workers, mechanics, and laborers, as required by Section 220 of the Labor Law, is complete, and it reserves the right to revise such schedule when required. If any occupation is not mentioned in the schedule of wage rates and supplements it shall be requested from the Industrial Commissioner, by the CONTRACTOR through the ENGINEER and such schedules, shall, upon notice to the CONTRACTOR, become and be a part of the wage and supplement schedules embodied in the CONTRACT.

SC-18 NON-DISCRIMINATION IN EMPLOYMENT

18.1 During the performance of the Contract, the CONTRACTOR shall comply with the following: Section 220-e of the State Labor Law including -

> (a) That in the hiring of employees for the performance of work under this Contract or any subcontract hereunder, no CONTRACTOR, SUBCONTRACTOR, nor any person acting on behalf of such CONTRACTOR or SUBCONTRACTOR, shall by reason of race, creed, color, sex, 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;
>
> (b) That no CONTRACTOR, SUBCONTRACTOR, nor any person acting on 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, sex or national origin;
>
> (c) That there may be deducted from the amount payable to the CONTRACTOR by the municipality under this Contract a penalty of five dollars for each person for each calendar day during which such person was discriminated against or

intimidated in violation of the provisions of the Contract;

(d) That this Contract may be canceled or terminated by the municipality and all monies due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of the provisions of the Contract;

(e) The aforesaid provisions of this Section covers every Contact for or on behalf of the municipality for the manufacture, sale or distribution of materials, equipment, or supplies shall be limited to operations performed within the territorial limits of the State of New York.

18.2 Non-discrimination Clauses of the Executive Law and Civil Rights Law:

(a) The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, creed, color, sex, or national origin, and will take affirmative action to insure that they are afforded equal employment opportunities without discrimination because of race, color, sex, or national origin. Such action shall be taken with reference, but not be limited to: recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination, rates of pay or other forms of compensation, and selection for training or retraining, including apprenticeship and on-the-job training.

(b) The CONTRACTOR will send to each labor union or representative or workers with which he has or is bound by a collective bargaining or other agreement or understanding, a notice, to be provided by the State Commission for Human Rights, advising such labor union or representative of the CONTRACTOR's agreement under clauses (a) through (g) (hereinafter called "non-discrimination clauses"). If the CONTRACTOR was directed to do so by the contracting agency as part of the bid or negotiation of this Contract, the CONTRACTOR shall request such labor union or representative to furnish him with a written statement that such labor union or representative will not discriminate because of race, creed, color, sex or national origin and that such labor union or representative either will affirmatively cooperate, within the limits of its legal and contractual authority, in the implementation of the policy and provisions of the non-discrimination clauses or that it consents and agrees that recruitment, employment and the terms and conditions of employment under this Contract shall be in accordance with purposes and provisions of these non-discrimination clauses. If such labor union or representative fails or refuses to comply with such a request that it furnish such a statement, the Contractor shall promptly notify the State Commission for Human Rights of such failure or refusal.

(c) The CONTRACTOR will post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Commission for Human Rights setting forth the substance of the provisions of clauses (a) and (b) and such provisions of the State's laws against discrimination as the State Commission for Human Rights shall determine.

(d) The CONTRACTOR will state, in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, that all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, sex, or national origin.

(e) The CONTRACTOR will comply with the provisions of Section 291-299 of the Executive Law and the Civil Rights Law, will furnish all information and reports deemed necessary by the State Commission for Human Rights for Human Rights under these non-discrimination clauses and such sections of the Executive Law, and will permit access to his books, records and accounts by the State Commission for Human Rights, the Attorney General and the Industrial Commissioner for purposes of investigation to ascertain compliance with these non-discrimination clauses and such sections of the Executive law and the Civil Rights Law.

(f) This Contract may be forthwith canceled, terminated or suspended in whole or in part, upon the basis of finding made by the State Commission for Human Rights that the contractor may be declared ineligible for further contracts made by or on behalf of the State or a public authority or agency of the State, until he has satisfied the State Commission for Human Rights that he has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses. Such findings shall be made by the State Commission of Human Rights after conciliation efforts by the Commission have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Commission, notice thereof has been given to the Contractor and an opportunity has been afforded him to be heard publicly before three members of the Commission. Such sanctions may be imposed and remedies invoked independently of or in addition to sanctions and remedies otherwise provided by law.

(g) The CONTRACTOR will include the provisions of clauses (a) through (f) in every sub-contract or purchase order in such a manner that such provisions will be binding upon each Sub-CONTRACTOR or vendor as to operations to be performed within the State of New York. The CONTRACTOR will take such action in enforcing such provisions of such Subcontract or purchase order as the contracting agency may direct, including sanctions or remedies for non-compliance.

SC-19 PROVISIONS FOR PUBLIC WORKS UNDER NEW YORK STATE LAW

During the performance of the Contract, the CONTRACTOR agrees as follows:

(a) That in the hiring of employees for the performance of work under this Contract or any subcontract hereunder, no CONTRACTOR, Subcontractor, nor any person acting on behalf of such CONTRACTOR or Subcontractor, shall by reason of age, race, creed, color, disability, sex, national origin, or marital status discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates;

(b) That no CONTRACTOR, SUBCON-TRACTOR, nor any person on his behalf, shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this Contract on account of age, race, creed, color, disability, sex, national origin, or marital status;

(c) That there may be deducted from the amount payable to the CONTRACTOR by the state or municipality under this Contract, a penalty of $50.00 for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the Contract;

(d) That this Contract may be canceled or terminated by the state or municipality, 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 section of the Contract; and

(e) The aforesaid provisions of this section covering every Contract for or on behalf of the state or municipality for the manufacture, sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the State of New York.

SC-20 FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

20.1 The applicant (for federal assistance involving a construction contract, or other participant in a program involving a construction contract as determined by regulation of an administering agency; also includes such persons after they become recipients of such federal assistance) hereby agrees that it will incorporate or cause to be incorporated into any contracts for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan, insurance or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan insurance or guarantee, the following equal opportunity clause:

During the performance of this Contract, the CONTRACTOR agrees as follows:

(a) The CONTRACTOR will not discriminate against any employee or applicant for employment because of age, race, color, religion, sex, or national origin. Such action, shall include, but not be limited to the following: Employment, upgrading, demotion or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The CONTRACTOR agrees to post in conspicuous places, available to employees, and applicants for employment, notices or be provided by the agency contracting officer setting forth the provisions of this nondiscrimination clause.

(b) The CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, state that all qualified applicants will receive consideration for employment without regard to age, race, color, religion, sex, or national origin.

(c) The CONTRACTOR will send to each labor union or representative of works for which he has a collective bargaining agreement or other Contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union or workers' representative of the CONTRACTOR's commitments under section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The CONTRACTOR will comply with all

provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The CONTRACTOR will furnish all information and reports required by Executive order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the CONTRACTOR's noncompliance with the nondiscrimination clauses of this Contract or with any of such rules, regulations or orders, this Contract may be canceled, terminated or suspended in whole or in part and the CONTRACTOR maybe declared ineligible for further Government contracts or federally assisted construction contracts in accordance with the procedures authorized in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The CONTRACTOR will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraph (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The CONTRACTOR will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event the CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of United States.

20.2 The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the Contract.

20.3 The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and SUBCONTRACTORS with the equal opportunity clause and the rules, regulations and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

20.4 The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of the September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, the United States Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any and all of the following actions: Cancel, terminate, or suspend in whole or in part, this grand (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant, and refer the case to the Department of Justice for appropriate legal proceedings.

20.5 AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA

(a) The CONTRACTOR will not discriminate against any employee or applicant for employment because he or she is a disabled veteran or veteran of the Vietnam era in regard to any position for which the employee or applicant for employment is qualified. The CONTRACTOR agrees to take affirmative action to employ, advance in employment and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veterans status in all employment practices such as the following: Employment upgrading, demotion or transfer, recruitment, advertising, compensation, and selection for training, including apprenticeship.

(b) The CONTRACTOR agrees that all suitable employment openings of the CONTRACTOR which exist at the time of the execution of this Contract and those which occur during the performance of this Contract, including

those not generated by this Contract and including those occurring at the establishment of the Contract other than the one wherein the Contract is being performed, but excluding those of independently operated corporate affiliates, shall be listed at an appropriate local office of the State employment service system wherein the opening occurs. The CONTRACTOR further agrees to provide such reports to such local office regarding employment openings and hires as may be required.

State and local government agencies holding federal contracts of $10,000.00 or more shall also list all of their suitable openings with the appropriate office of the State employment service, but are not required to provide those reports set forth in paragraphs (d) and (e).

(c) Listing of employment openings with the employment service system pursuant to this clause shall be made at least concurrently with the use of any other recruitment source or effort and shall involve the normal obligations which attach to the placement of a bonafide job order, including the acceptance of referrals of veterans and nonveterans. The listing of employment openings does not require the hiring of any particular job applicant or from any particular group of job applicants, and nothing herein is intended to relieve the CONTRACTOR from any requirements in Executive orders or regulations regarding nondiscrimination in employment.

(d) The reports required by paragraph (b) of this clause shall include, but not be limited to, periodic reports which shall be filed at least quarterly with the appropriate local office, or, where the CONTRACTOR has more than one hiring location in a State, with the central office of that State employment service. Such report shall indicate for each hiring location (1) the number of individuals hired during the reporting period, (2) the number of nondisabled veterans of the Vietnam era hired, (3) the number of disabled veterans of the Vietnam era hired, and (4) the total number of disabled veterans hired. The reports should include covered veterans hired for on-the-job training under 38 USC 1787. The CONTRACTOR shall submit a report within thirty (30) days after the end of each reporting period wherein any performance is made on this Contract identifying data for each hiring location. The CONTRACTOR shall maintain at each hiring location copies of the reports submitted until the expiration of one year after final payment under the Contract, during which time these reports and related documentation shall be made available, upon request, for examination by any authorized representatives of the contracting officer or of the Secretary of Labor. Documentation would include personnel records respecting job openings, recruitment and placement.

(e) Whenever the CONTRACTOR becomes contractually bound to the listing provisions of this clause, it shall advise the employment service system in each State where it has establishments of the name and location of each hiring location in the State. As long as the CONTRACTOR is contractually bound to these provisions and has so advised the State system, there is no need to advise the State system of subsequent contracts. The CONTRACTOR may advise the State system when it is no longer bound by this Contract clause.

(f) This clause does not apply to the listing of employment openings which occur and are filled outside of the 50 States, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands.

(g) The provisions of paragraphs (b), (c), (d), and (e) of this clause do not apply to openings which the CONTRACTOR proposes to fill from within his own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement. This exclusion does not apply to a particular opening once an employer decides to consider applicants outside of his own organization or employer-union hiring arrangement. This exclusion does not apply to a particular opening once an employer decides to consider applicants outside of his own organization or employer-union arrangement for that opening.

(h) As used in this clause:

(1) "All suitable employment openings" includes, but is not limited to, openings which occur in the following job categories: production and nonproduction; plant and office; laborers and mechanics; supervisory and nonsupervisory; technical, executive, administrative and professional openings as are compensated on a salary basis of less than $25,000.00 per year. This term includes full-time employment, temporary employment of more than three days' duration, and part-time employment. It does not include openings which the CONTRACTOR proposes to fill within his own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement nor openings of that institution. Under the most compelling circumstances and employment opening may not be suitable for listing, including such situations where the needs of the Government cannot reasonably be otherwise supplied, where listing would be contrary to national security, or where the requirement of listing would otherwise not be for the best interests of the Government.

(2) "Appropriate office of the State employment service system" means the local office of the Federal-State national system of public employment offices with assigned responsibility for serving the area where the employment opening is to be filled, including the District of Columbia, Guam, Puerto Rico and the Virgin Islands.

(3) "Openings which the CONTRACTOR proposes to fill from within his own organization" means employment openings from which no consideration will be given to persons outside the CONTRACTOR's organization (including any affiliates, subsidiaries and parent companies) and includes any openings which the CONTRACTOR proposes to fill from regularly established "recall" lists.

(4) "Openings which the CONTRACTOR proposes to fill pursuant to a customary and traditional employer-union hiring arrangement" means employment openings which the CONTRACTOR proposes to fill from union halls, which is part of the customary and traditional hiring relationship which exists between the CONTRACTOR and representatives of his employees.

(i) The CONTRACTOR agrees to comply with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.

(j) In the event of the CONTRACTOR's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.

(k) The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director of Office of Federal Contract Compliance Programs ("OFCCP"), provided by or through the contracting officer. Such notice shall state the CONTRACTOR's obligation under the law to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era for employment, and the rights of applicants and employees.

(l) The CONTRACTOR will notify each labor union or representative of workers for which it has a collective bargaining agreement or other contract understanding, that the CONTRACTOR is bound by the terms of the Vietnam Era Veterans Readjustment Assistance Act, and is committed to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era.

(m) The CONTRACTOR will include the provisions of this clause in every subcontract or purchase order of $10,000.00 or more unless exempted by rules, regulations or orders of the Secretary issued pursuant tot he Act, so that such provisions will be binding upon each subcontractor or vendor. The CONTRACTOR will take such action with respect to any subcontract or purchase order as the OFCCP Director may direct or enforce said provisions, including action for noncompliance.

20.6 AFFIRMATIVE ACTION FOR HANDICAPPED WORKERS

(a) The CONTRACTOR will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. The CONTRACTOR agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: Employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

(b) The CONTRACTOR agrees to comply with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.

(c) In the event of the CONTRACTOR's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(d) The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the OFCCP Director or his/her designee, provided by or through the contracting officer. Such notices shall state the CONTRACTOR's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of

applicants and employees.

(e) The CONTRACTOR shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the CONTRACTOR is bound by the terms of section 503 of the Rehabilitation Act of 1973, and is to be committed to take affirmative action to employ and advance in employment physical and mentally handicapped individuals.

(f) The CONTRACTOR will include the provisions of this clause in every subcontract or purchase order of $2,500.00 or more unless exempted by rules, regulations or orders of the Secretary issued pursuant to section 503 of the Act, so that such provisions will be binding upon each subcontractor or vendor. The CONTRACTOR will take such action with respect to any subcontract or purchase order a the OFCCP Director may direct to enforce such provisions, including action for noncompliance.

SC-21 SUBMISSION OF CERTIFIED PAYROLLS

CONTRACTOR shall in accordance with New York Labor Law Section 220(3)(a) submit to the OWNER within thirty days after issuance of its first payroll on the project and each and every thirty days thereafter until the conclusion of the project, a transcript of the original payroll record, as provided under New York Labor Law Section 220(3)(a), subscribed and affirmed as true under penalty of perjury. Failure to do so shall be a material breach of this contract.

SC-22 CONLICTS WITH NEW YORK STATE LAW

Should any provision of the General or Supplemental Conditions contained herein conflict with New York State law, New York State law shall control.

NON-FEDERAL LABOR - STANDARDS

1. GENERAL PROVISIONS

The following Non-Federal Labor-Standards, Provisions, including the following provisions concerning maximum hours of work, minimum rates of pay, and overtime compensation, with respect to the categories and classifications of employees hereinafter mentioned are included in this contract pursuant to the requirements of applicable State or local laws, but the inclusion of such provisions shall not be construed to relieve the Contractor or any subcontractor from the pertinent requirement of any corresponding Federal Labor-Standards Provisions of this contract. In case the minimum rates of pay set forth below shall be higher than the minimum rates of pay required by or set forth in the Federal Labor-Standards Provisions of the contract for corresponding classifications, the minimum rates of pay set forth below shall be deemed, for the purposes of this contract, to be the applicable minimum rates of pay for such classifications. The limitations, if any, in these Non-Federal Labor-Standards Provisions upon the hours per day, per week or per month which employees engaged on the work covered by this contract may be required or permitted to work thereon shall not be exceeded.

2. STATE LABOR LAW

The Contractor shall comply in every respect with the provisions of Section 220 of the Labor Law and no laborer, workman, or mechanic in the employ of a Contractor, subcontractor or other person 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 hours in any one calendar day or more than five days in any one week except in cases of extraordinary emergency; including fire, flood or danger to life or property, and no such person shall be so employed more than eight hours in any day or more than five days in any one week, except in such an emergency. The wages to be paid for a legal day's work, as defined by said section, to laborers, workmen or mechanics employed, as aforesaid shall be not less than the prevailing rate for a day's work in the same trade or occupation in the locality within the State where the aforesaid work, on, about, or in connection with which such labor is performed in this final of completed form is to be situated, erected or used. Laborers shall be paid not less than the minimum hourly rate or wage designated by the Industrial Commissioner, pursuant to Section 220-d of the Labor Law, said minimum hourly rate of wage having been designated by the Industrial Commissioner are designated in the wage rate sheet forming a part of this contract and are to be paid in cash, provided, however, that an employer, except as otherwise provided in Subdivision 3 of Section 220 of the State Labor Law may pay his employees by check, if he furnished satisfactory proof to the Industrial Commissioner of his financial responsibility and gives reasonable assurance that such checks may be cashed by employees without difficulty and for the full amount for which they are drawn. The Contractor shall abide by and pay workmen, laborers and mechanics employed either by himself or a subcontractor the schedule of wages, as annexed to and forming a part of the specifications for the work involved in the contract pursuant to the Labor Law.

The Contractor shall comply with the provisions of Section 222A of the Labor Law relating to prevention of dust hazard in public works, if such hazard shall exist. If said Section is not complied with by the Contractor the contract shall be void.

Pursuant to the provisions of Section 222 of the Labor Law, this contract shall be void unless the Contractor is employing persons upon the work embraced in the contract gives preference to citizens of the State of New York, who have been residents for at least six consecutive months immediately prior to the commencement of their employment, if available. Each person so employed shall furnish satisfactory proof of residence, in accordance with rule adopted by the Industrial Commissioner. Each Contractor and subcontractor shall keep a list of his employees, stating whether they are citizens and, in case of naturalization, the date thereof, and the name of the court in which granted.

3. QUALIFICATIONS FOR EMPLOYMENT

No person under the age of 16 years and no person currently serving sentence in a penal or correctional institution shall be employed to perform any work on the project under this contract. No persons whose age or physical condition is such as to make his employment dangerous to his health or safety or the health and safety of others shall be employed to perform any work on the project under this contract; provided that this sentence shall not operate against the employment of physically handicapped persons, otherwise employable, where such persons may safely do work which they can ably perform.

All employees engaged in work on the project under this contract shall have the right to organize and bargain collectively through representatives of their own choosing, and such employees shall be free from interference, restraint, and coercion of employees in the designation of such employees' representatives, in self-organization, and in other concerted activities of such employees, for the purpose of collective bargaining or other mutual aid or protection and no person seeking employment on the project under this contract and no person employed on the project under this contract shall be required, as a condition of initial or continued employment to join company union or to refrain from joining, organizing or assisting a labor organization of such persons own choosing.

4. DISCRIMINATION

The contractor shall comply with the provision of Section 220-e of the Labor Laws as follows:

1. That in the hiring of employees for the performance of work under this contract or any subcontract hereunder, no Contractor or subcontractor, or any person acting on behalf of such Contractor or subcontractor, shall by reason of race, sex, religion, color or national origin(s) discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates.

2. That no Contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, sex, religion, color or national origin(s).

3. That there may be deducted from the amount payable to the Contractor by the State or municipality under this contract a penalty of five dollars for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the contract.

4. That this contract may be canceled or terminated by the State or municipality, and all monies due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this section of the contract.

5. The aforesaid provisions of this section covering every contract for or on behalf of the State or a municipality for the manufacturer, sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the State of New York.

Article 8, Section 220 of the Labor Law, as amended by Chapter 750 of the Laws of 1956, also provides, among other things, that it shall be the duty of the fiscal officer to make a determination of the schedule of wages to be paid to all laborers, workmen and mechanics employed on public work projects, including supplements for welfare, pension, vacation and other benefits. These supplements may include hospital, surgical, or medical insurance or benefits; life insurance or death benefits; accidental death or dismemberment insurance; and pension or retirement benefits. If the amount of supplements provided by the employer is less than the total supplements shown on the wage schedule, the difference shall be paid in cash to employees.

Article 8, Section 220 of the Labor Law, as amended by Chapter 750 of the Laws of 1956, also provides that the supplements to be provided to laborers, workmen and mechanics upon public works "shall be in accordance with the prevailing practices in the locality...". The amount for supplements listed on the enclosed schedule does not necessarily include all types of prevailing supplements in the locality and a future determination of the Industrial Commissioner may require the Contractor to provide additional supplements.

The Contractor shall provide statutory benefits for disability benefits, workmen's compensation, unemployment insurance and social security. In case it becomes necessary for the Contractor or any subcontractor to employ on the project under this contract any person in a trade or occupation (except executive, supervisory, administrative, clerical or other non-manual workers as such) for which no minimum rate is herein specified, the Contractor shall immediately notify the local public agency who will promptly thereafter furnish the Contractor with the minimum rate. The minimum rate thus furnished shall be applicable as a minimum for such trade or occupation from the time of the initial employment of the person affected and during the continuance of such employment.

5. POSTING MINIMUM WAGE RATES

The Contractor shall post at conspicuous points on the site of the project a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned.

NYS Department of Labor

Workforce New York

Put us to work for you

Eliot Spitzer, Governor

M. Patricia Smith, Commissioner

City of Poughkeepsie

Scott Smith, Project Engineer IV
Clough,Harbour & Assoc., LLP
441 South Salina Street
Syracuse NY 13212

Schedule Year 2007
Date Requested 07/06/2007
PRC# 2006001767

Location DeLaval Property
Project ID#
Project Type Remedial construction at the DeLaval Property under the NYSDEC's Environmental Restoration (ERP) Program. The remedy includes installation of a bulkhead down-gradient of the area of concern, the

PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Wage Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2007 through June 2008. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website www.labor.state.ny.us. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: _____ Date Cancelled: _____

Name & Title of Representative: _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission: a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project.

Wages and Supplements

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule form the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12240; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website www.labor.state.ny.us.

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website www.labor.state.ny.us.

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website www.labor.state.ny.us.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. Payrolls must be maintained for at least three (3) years from the project's date of completion. At a minimum, payrolls must show the following information for each person employed on a public work project: Name, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid or provide, and Daily and weekly number of hours worked in each classification.

Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The Department of Jurisdiction (Contracting Agency) shall receive and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, by are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed $100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds $25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8 . Section 220-a).

Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

Withholding of Payments

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

Summary of Notice Posting Requirements

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.

Every employer providing workers. compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers. Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

Apprentices

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above or is performing work outside the classification of work for which the apprentice is indentured, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12240 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

Interest and Penalties

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

Debarment

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

Criminal Sanctions

Willful violations of the Prevailing Wage Law (Article 8 and Article 9 of the Labor Law) constitute a misdemeanor punishable by fine or imprisonment, or both.

Discrimination

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex 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 (NYS Labor Law, Article 8, Section 220-e(a)).

No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220-e(b)).

The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of $50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c)).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d)).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

Workers' Compensation

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Unemployment Insurance

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.

NYS Department of Labor
Workforce New York
Put us to work for you

Eliot Spitzer, Governor

M. Patricia Smith, Commissioner

City of Poughkeepsie

Scott Smith, Project Engineer IV
Clough,Harbour & Assoc., LLP
441 South Salina Street
Syracuse NY 13212

Schedule Year 2007
Date Requested 07/06/2007
PRC# 2006001767

Location DeLaval Property
Project ID#
Project Type Remedial construction at the DeLaval Property under the NYSDEC's Environmental Restoration (ERP) Program. The remedy includes installation of a bulkhead down-gradient of the area of concern, the

Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

Contractor Information
All information must be supplied

Federal Employer Identification Number: _____

Name: _____

Address: _____

_____

City: _____ State: _____ Zip: _____

Amount of Contract: $_____

Approximate Starting Date: ___/___/___

Approximate Completion Date: ___/___/___

Contract Type:
[ ] (01) General Construction
[ ] (02) Heating/Ventilation
[ ] (03) Electrical
[ ] (04) Plumbing
[ ] (05) Other : _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

Budget Policy & Reporting Manual

B-610

Public Work Enforcement Fund

effective date December 7, 2005

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1. Purpose and Scope:

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

2. Background and Statutory References:

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

3. Procedures and Agency Responsibilities:

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor
Administrative Finance Bureau-PWEF Unit
Building 12, Room 464
State Office Campus
Albany, NY 12240

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.

Introduction to the Prevailing Rate Schedule

Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Overtime

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is for each hour worked, some classifications require the payment or provision of supplements for each hour paid (including paid holidays on which no work is performed) and/or may require supplements to be paid or provided at a premium rate for premium hours worked.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.state.ny.us) for current wage rate information.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
boilermaker	1:1,1:4
Mason	1:1,1:4
Carpenter	1:1,1:4
Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:4
Iron Worker	1:1,1:6
Laborer	1:1,1:3
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3

Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12240

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - New York City	212-621-0835	212-621-0867
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Dutchess County General Construction

Asbestos Worker — 07/01/2007

JOB DESCRIPTION Asbestos Worker **DISTRICT** 1

ENTIRE COUNTIES
Columbia, Delaware, Dutchess, Greene, Orange, Putnam, Rockland, Sullivan, Ulster

WAGES
Per hour

	07/01/2007
Asbestos Worker: Removal & Hazardous Abatement Only	$ 28.05

Only for the removal of insulation materials from mechanical systems which are not going to be scrapped.

SUPPLEMENTAL BENEFITS
Per hour paid

Journeyman	$ 15.65

OVERTIME PAY
See (B, E, *Q, **T, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (2, 4, 6, 25) on HOLIDAY PAGE
* Code Q applies to 4,6,& 25.
** Code T applies to 2.

1-201HV

Boilermaker — 07/01/2007

JOB DESCRIPTION Boilermaker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per Hour:	07/01/2007-12/31/2007	01/01/2008-12/31/2008	01/01/09
Boilermaker	$ 44.09	$ 44.98	$ 45.89
Repairs & Renovation	$ 44.09	$ 44.98	$ 45.89

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2007-12/31/2007	01/01/2008-12/31/2008	01/01/2009
BoilerMaker	48% of Hourly Wage Paid + $ 7.85	48% of Hourly Wage Paid + $ 8.09	48% of Hourly Wage Paid + $ 8.33

Repairs & Renovation*

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay.
*Same as Boilermaker (Includes replacement of parts and repairs & renovation of an existing unit).

OVERTIME PAY
See (D, O) on OVERTIME PAGE

HOLIDAY
Paid: See (8, 16, 23, 24) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 12, 15, 25) on HOLIDAY PAGE
NOTE: *Employee must work in pay week to receive Holiday Pay.

**Boilermarker gets 4 times the hourly wage rate for working on Labor Day.

***Repairs & Renovation see (B,E,Q) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1/2) Year Terms at the following pecentage of Boilermaker's Wage

1st	2nd	3rd	4th	5th	6th	7th	8th
65%	65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits Per Hour:

	07/01/2007-12/31/2007	01/01/2008-12/31/2008	01/01/2009
Boilermaker Apprentice(s)	48% of Hourly Wage Paid + $ 7.85	48% of Hourly Wage Paid + $ 8.09	48% of Hourly Wage Paid + $ 8.33
Repairs & Renovation* Apprentice(s)	$48% of Hourly Wage Paid + $ 7.61		

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay.
*Includes replacement of parts and repairs & renovation of an existing unit.

4-5

Carpenter **07/01/2007**

JOB DESCRIPTION Carpenter **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per hour: 07/01/2007

Marine Construction:

Marine Diver	$ 52.53
M.D.Tender	37.78

SUPPLEMENTAL BENEFITS
Per hour paid:

Journeyman	$ 36.06

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (18,19) on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.
Apprentices See (5,6,10,11,13,16,18,19)

Overtime: See (5,6,10,11,13,16,18,19) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wager per hour:

(1) year terms:

1st	2nd	3rd	4th
$ 16.55	$ 20.69	$ 26.90	$ 33.11

Supplemental benefits per hour:

Apprentices $ 23.89

9-1456MC

Carpenter **07/01/2007**

JOB DESCRIPTION Carpenter **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per hour: 07/01/2007

Carpet/Resilient
Floor Coverer $ 41.71

SUPPLEMENTAL BENEFITS
Per hour paid:

Floor Coverer $ 34.56

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (18, 19)on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.
Apprentices See (5,6,11,13,16,18,19,25)

Overtime: See (5,6,11,13,16,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wage per hour:

(1) year terms:

1st.	2nd.	3rd.	4th.
$ 18.80	$22.82	$28.86	$34.90

Supplemental benefits per hour:

Apprentices $ 23.14

9-2287

Carpenter **07/01/2007**

JOB DESCRIPTION Carpenter **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per hour: 07/01/2007

Piledriver $ 42.01
Dockbuilder $ 42.01

SUPPLEMENTAL BENEFITS
Per hour paid:

Journeyman $ 36.01

OVERTIME PAY
See (B, E2, O) on OVERTIME PAGE

HOLIDAY
Paid: See (18,19)on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.
Apprentices See (5,6,11,13,16,18,19,25)

Overtime: See (5,6,11,13,16,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wages per hour:

(1)year terms:

1st.	2nd.	3rd.	4th.
$ 18.80	$ 22.83	$ 28.87	$ 34.92

Supplemental benefits per hour:

Apprentices $ 23.89

9-1456

Carpenter - Building / Heavy&Highway — 07/01/2007

JOB DESCRIPTION Carpenter - Building / Heavy&Highway **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Orange, Sullivan, Ulster

WAGES
WAGES:(per hour)

	07/01/2007
Carpenter	$ 29.30
Carpenter-Floor Coverer*	29.30
Dockbuilder/Piledriver*	29.30
Diver Tender*	27.51
Diver(WET)*	53.24
Diver(DRY)*	32.61

* Note: Rate DOES NOT apply in Orange or Dutchess County.
On projects for removal and/or abatement of asbestos or any toxic or hazardous material and it is required by the employer or mandated by NYS or Federal Regulation to wear protective equipment an additional $2.00 per hour above their appropriate rate for all classifications including apprentices. For work on smokestacks, silos, or steeples more than fifty (50) feet high, an additional $2.00 per hour, payable from the ground up.

SUPPLEMENTAL BENEFITS
(per hour paid)

Journeyman	$ 17.46
Apprentices	
1st term	8.31
2nd term	12.41
3rd term	16.11
4th term	16.46

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
BUILDING:
Paid: See (1) on HOLIDAY PAGE.
Overtime: See (5, 6) on HOLIDAY PAGE.
HEAVY/HIGHWAY:
Paid: See (5, 6, 16) on HOLIDAY PAGE including benefits.
Overtime: See (5, 6, 16) on HOLIDAY PAGE.

REGISTERED APPRENTICES
1 Year terms at the following rates.

1st	2nd	3rd	4th
$ 14.85	$ 17.22	$ 20.80	$ 24.04

8-19B/H&H

Electrician — 07/01/2007

JOB DESCRIPTION Electrician **DISTRICT** 8

ENTIRE COUNTIES
Sullivan, Ulster

PARTIAL COUNTIES
Delaware: Only in the Townships of Andes, Harpersfield, Kortwright,Stamford, Bovina, Roxbury, Middletown and those portions of Colchester and Hancock south of the East Branch of the Delaware River.
Dutchess: All of the county except for the towns of Fishkill,East Fishkill, and Beacon.
Greene: That portion of the county south of a line following the south limits of the city of Catskill in a Westerly direction from the Hudson River to Highway 23A along 23A to the road following the Little Westkill and continuing along this road to Delaware County.

WAGES
Per hour:

	07/01/2007	04/01/2008
Electrician Wireman/Technician	$ 35.00*	36.00*

SHIFT DIFFERENTIAL: On Public Work in New York State when shift work is mandated either in the job specifications or by the contracting agency, the following rates apply:

Shift worked between 4:30pm & 12:30am	$ 41.06*	42.06*
Shift worked between 12:30am & 8:30am	$ 45.99*	46.99*

* On jobs where employees are required to work from bosun chairs, swinging scaffolds, etc.,forty (40) feet or more above the ground, or under compressed air, using Scottair packs, gas masks or in shafts or tunnels, they shall receive an additional $2.00 per hour above the regular straight time rate.

SUPPLEMENTAL BENEFITS

Per hour worked:	07/01/2007	04/01/2008
Journeyman	$ 20.94 plus 6% of wage	20.96 plus 6% of wage

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 13, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages:

(6)month terms at the following percentage of journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
30%	35%	40%	45%	50%	55%	65%	70%	75%	85%

Supplemental Benefits per hour worked:	07/01/2007	
1st & 2nd term	$ 6.97	plus 6% of wage
3rd & 4th term	8.92	plus 6% of wage
5th & 6th term	10.87	plus 6% of wage
7th & 8th term	13.82	plus 6% of wage
9th & 10th term	16.72	plus 6% of wage

8-363/2

Electrician — 07/01/2007

JOB DESCRIPTION Electrician **DISTRICT** 8

ENTIRE COUNTIES
Orange, Putnam, Rockland

PARTIAL COUNTIES
Dutchess: Towns of Fishkill, East Fishkill, and Beacon.

WAGES
Per hour:

	07/01/2007	04/01/2008
Electrician Wireman/Technician	$ 39.00*	40.00

*SHIFT DIFFERENTIAL: On Public Work in New York State when shift work is mandated either in the job specifications or by the contracting agency, the following rates apply:

Shift worked between 4:30pm & 12:30am	$ 45.75*	46.75
Shift worked between 12:30am & 8:30am	$ 51.25*	52.25

* On jobs where employees are required to work from boatswain chairs, swinging scaffolds, etc.,forty (40) feet or more above the ground, or under compressed air, using Scottair packs, gas masks or in shafts or tunnels, they shall receive an additional $2.00 per hour above the regular straight time rate.

SUPPLEMENTAL BENEFITS
Per hour worked:

	07/01/2007
Journeyman	$ 20.97 plus 6% of wage

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 13, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages:

(6)month terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
30%	35%	40%	45%	50%	55%	65%	70%	75%	85%

Supplemental Benefits per hour worked:	07/01/2007	
1st & 2nd term	$ 6.97	plus 6% of wage
3rd & 4th term	8.92	plus 6% of wage
5th & 6th term	10.87	plus 6% of wage
7th & 8th term	13.82	plus 6% of wage
9th & 10th term	16.72	plus 6% of wage

8-363/1

Elevator Constructor **07/01/2007**

JOB DESCRIPTION Elevator Constructor **DISTRICT** 1

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Sullivan, Ulster

PARTIAL COUNTIES
Columbia: Only the Townships of Ancram, Clermont, Copake, Gallatin,Germantown, Livingston and Taghkanic.
Delaware: Towns of Andes, Bovina, Colchester,Davenport, Delhi, Harpersfield, Hemdon, Kortright, Meredith, Middletown, Roxbury, Hancock & Stamford
Greene: The Townships of Ashland, Catskill, Halcott, Hunter, Jewett, Lexington, Rattsville & Windham
Rockland: Only the Township of Stony Point.
Westchester: Only the Townships of Bedford, Lewisboro, Cortland,Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

WAGES

Per Hour	07/01/2007	01/01/2008 Additional	01/01/2009 Additional
Mechanic	$ 43.515	$ 3.37	$ 3.00
Helper	30.46	3.37	3.00

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman	$ 14.89 + 8 % of wage	$ 14.89 +8% of wage
Helper	14.89 + 6 % of wage	14.89 +6% of wage

OVERTIME PAY
See (D, O) on OVERTIME PAGE

HOLIDAY
Paid: See (5,6,15,16) on HOLIDAY PAGE
Overtime: See (5,6,15,16) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

1st 6mo	2nd 6mo	2nd yr	3rd yr	4th yr
50 %	55 %	65 %	70 %	80 %

Supplemental Benefits per hour worked

Apprentices	$ 14.89 +6% ofwage	$ 14.89 +6% of wage

1-138

Glazier — 07/01/2007

JOB DESCRIPTION Glazier **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES
Per hour: 07/01/2007

Glazier	$ 43.60
Scaffolding	$ 44.60
Repair & Maintenance:	
Glazier	$ 25.35

Repair & Maintenance- All repair & maintenance work on a particular building, whenever performed, where the total cumulative contract value is under $100,000.00.

SUPPLEMENTAL BENEFITS
Per hour paid:

Journeyman....	$ 19.90
Glazier Repair & Maintenance**:	$ 11.89

OVERTIME PAY
OVERTIME: See (C*,D*O) on OVERTIME PAGE.

* Denotes if an optional 8th hour is required same will be at the regular rate of pay. If 9th hour is worked then both hours or more (8th and 9th or more) will be at the double time rate of pay.

** For Repair & Maintenance see (B,F, P) on overtime page.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE
The Following are paid holidays for the Repair & Maintenance Class:
New Years day, Presidents day, Memorial day, Independents day, Labor day, Thanksgiving day, Day after Thanksgiving, and Christmas day.

REGISTERED APPRENTICES
Wage per hour:

(1) year terms at the following wage rates.

1st term...	$ 14.21
2nd term...	$ 20.75
3rd term...	$ 24.89
4th term...	$ 33.17

Supplemental Benefits:
(Per hour worked)

1st term....	$ 9.13
2nd term....	$ 13.62
3rd term....	$ 14.87
4th term....	$ 17.39

9-1281 (DC9 NYC)

Insulator - Heat & Frost — 07/01/2007

JOB DESCRIPTION Insulator - Heat & Frost **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Rockland, Westchester

WAGES
Per hour: 07/01/2007

Asbestos Worker	$ 43.10
Fire Stop Work*	
Asbestos Worker	$ 28.36

* Applies on all exclusive Fire Stop Work (When contract is for Fire Stop work only). No apprentices on these contracts only.

Note: Additional $0.50 per hour for work 30 feet or more above floor or ground level.

SUPPLEMENTAL BENEFITS
(per hour paid)

Journeyman	$ 21.19
Fire Stop Work:	
Journeyman	$ 9.16

OVERTIME PAY
OVERTIME: See (B ,E, Q, T*, V) on OVERTIME PAGE.

HOLIDAY
HOLIDAY:
Paid: See (1) on HOLIDAY PAGE.
Overtime: See (2*, 4, 6, 16, 25) on HOLIDAY PAGE.
*Note: Labor Day triple time if worked.

REGISTERED APPRENTICES
(1) year terms at the following percentage of journeyman's rate.

1st	2nd	3rd	4th

$ 26.52	$ 28.58	$ 30.66	$ 34.81

Supplemental Benefits paid per hour paid:

Apprentices:

1st term	$ 12.95
2nd term	13.99
3rd term	15.02
4th term	17.08

8-91

Ironworker — 07/01/2007

JOB DESCRIPTION Ironworker **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster

WAGES
Per hour:

	07/01/2007
Structural	$ 36.90
Reinforcing	36.90
Ornamental	36.90
Chain Link Fence	36.90

SUPPLEMENTAL BENEFITS
Per hour paid:

Journeyman	$ 25.65

OVERTIME PAY
OVERTIME:.....See (B*, E**, Q, V) on OVERTIME PAGE.
*Note: Double Time after 10 hours Monday thru Friday.
**Note: On Saturdays, double time after 8 hours.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages:

(1)year terms at the following wage.

1st	2nd	3rd	4th
$ 22.14	$ 25.83	$ 29.52	$ 33.21

Supplemental Benefits per hour worked:

1st year	$ 22.75
2nd year	23.48
3rd year	24.20
4th year	24.93

8-417

Laborer — 07/01/2007

JOB DESCRIPTION Laborer **DISTRICT** 1

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
Columbia: Only the Townships of Ancram, Claverack, Clermont, Copake,Gallatin, Germantown, Greenport, Hillsdale, Livingston, and Taghkanic.

WAGES
GROUP #1:

General Laborer, Mason tenders, Carpenter Tenders, Labor Stripping and Cleaning Forms, Laborer Grading and Digging Ditches, Sweepers and Cleaners.

GROUP # 2
Skilled Laborer, Hod Carriers, Plasterers helpers, Scaffold Builders (padlock and self-supporting scaffold 14' or under all runways), Mortar Mixers (machine and hand), Concrete Mixers (by machine under 21E), Vibrators, Form Setters, Working Labor Foreman, Jack Hammers and Oper. Signal Men, Gunniting, Shop Stewards, Motor Buggs, Water Pumps(2" or under), Barco Machine, Wreckers, Paving Breaker, Power Saw Operators, Other Laborer Machine Operators.

GROUP # 3:
Blaster, Laser Beam Oper.,Asphalt Rakers & Drillers

WAGES per hour

	07/01/2007	06/01/2008 Additional
GROUP # 1	$ 25.75	$ 1.70
GROUP # 2	26.25	1.70
GROUP # 3	28.10	1.70

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman	$ 17.15	$ 17.15

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

		Additional
1000 Hour terms		
1st term	$ 14.50	$ 1.00
2nd term	15.50	1.00
3rd term	16.50	1.00
4th term	17.50	1.00

Supplemental Benefits per hour worked

Apprentices	$ 9.55	$ 9.55

1-1000

Laborer - Building — 07/01/2007

JOB DESCRIPTION Laborer - Building **DISTRICT** 8

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
Columbia: Only the Townships of Greenport, Claverack, Philmont,Clermont, Germantown, Livingston, Hillsdale, Gallatin, Copake, Ancram, Taghkanic and the City of Hudson.

WAGES
ALL WORK RELATED WITH TOXIC OR ANY ASBESTOS OR HAZARDOUS MATERIAL

WAGES: (per hour)*

	07/01/2007
Protective Gear Not Required	$ 27.00
Protective Gear Required	31.55

SUPPLEMENTAL BENEFITS

(per hour worked)
Journeyman $ 16.95

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

8-17tox

Laborer - Heavy&Highway **07/01/2007**

JOB DESCRIPTION Laborer - Heavy&Highway **DISTRICT** 1

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
Columbia: Only the Townships of Ancram, Claverack, Clermont, Copake,Gallatin, Germantown, Greenport, Hillsdale, Livingston, and Taghkanic.

WAGES
GROUP # 1:
Flagperson, Placing & maintenance of all flares, cones, lights, signs, barricades, traffic patterns and all reflective type materials for traffic control, custodial work, traffic directors, temporary heat or light tenders, tool room.

GROUP # 2:
General Laborer, Dumpman, Pitman, All AFL-CIO Trades Tenders. Concrete Man, Signal Man, Pipe Layer, Rip Rap, Dry Stone Layer, Jack Hammer, Powderman, Highscalers, Power Buggy Operator, Steel Rod Carrier, Vibratory Oper., Other Machine Oper., Wrecking, Vibrator Operator-Compactor, Gunite & Sand Blasting, Water Pumps 2" or under, Nipper, Chucker, Asphalt Worker.

GROUP # 3:
Asphalt Raker, Asphalt Screedman, Drillers (all), Laser Beam Operator, Form Setters/Aligners, Blaster.

WAGES per hour

	07/01/2007
Group # 1	$ 22.30
Group # 2	26.06
Group # 3	27.06

All employees who work an irregular work day that starts after 9:00 AM on a governmental mandated schedule shall be paid an additional 15% per hour.

SUPPLEMENTAL BENEFITS
Per hour worked & holidays

Journeyman $ 16.55

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 13, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 13, 15, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

1000 hour year terms

1st Term	$ 14.50
2nd Term	15.50
3rd Term	16.50
4th Term	17.50

Supplemental Benefits per hour worked & Holidays

Apprentices	$ 9.35

1-1000h

Laborer - Heavy&Highway — 07/01/2007

JOB DESCRIPTION Laborer - Heavy&Highway **DISTRICT** 8

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
Columbia: Only the Townships of Greenport, Philmont, Germantown,Livingston, Hillsdale, Taghkanic, Gallatin, Copake, Ancram, City of Hudson.

WAGES
ALL WORK RELATED WITH TOXIC OR ANY ASBESTOS OR HAZARDOUS MATERIAL(Five feet or more outside of building foundation line)

WAGES:(per hour)

	07/01/2007
Protective Gear Not Required	$ 29.50
Protective Gear Required	33.40

SHIFT DIFFERENTIAL: On all NYS D.O.T. or other Governmental mandated irregular or off shift work, an additional 15% of wage on straight time hours.

SUPPLEMENTAL BENEFITS
(per hour paid)

Journeyman	$ 15.95

OVERTIME PAY
See (B, E, Q, *S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 13, 15, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 13, 15, 26) on HOLIDAY PAGE
*NOTE: If Saturday Holiday is worked, Code S applies.

REGISTERED APPRENTICES
Wages per hour

1000 hour year terms

1st term	$ 18.01
2nd term	21.28
3rd term	24.56
4th term	27.83

Supplemental Benefits per hour paid:

Apprentice	$ 12.40

8-17tox

Lineman Electrician — 07/01/2007

JOB DESCRIPTION Lineman Electrician **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES
Per hour:

Includes Teledata Work within Ten feet of High Voltage Transmission Lines

	07/01/2007	05/05/2008	05/04/2009
Lineman/Tech./Welder	$ 40.09	$ 42.19	$ 44.30
Cable splicer	40.09	42.19	44.30
Digging Machine Operator	36.08	37.97	39.87
Tract Trailer Driver	34.08	35.86	37.66
Truck Driver/Groundman	32.07	33.75	35.44
Mechanic 1st Class	32.07	33.75	35.44
Flagman	24.05	25.31	26.58

Additional 1.00 per hr.for entire crew when a helicopter is used.

Above rates applicable on all overhead Transmission line work & Fiber Optic Cable where other construction trades are or have been involved. This applies to transmission line work only, not other construction.

Lineman/Technician/Welder	$ 38.87	$ 40.98	$ 43.08
Digging Machine Operator	34.98	36.88	38.77
Tractor Trailer Driver	33.04	34.83	36.62
Truck Driver/Groundman	31.10	32.78	34.46
Mech. 1st Class	31.10	32.78	34.46
Flagman	23.32	24.59	25.85
Certified WelderPipe Type Cable	40.81	43.03	45.23
Cable Splicer pipe type cable	42.76	45.08	47.39

Additional 1.00 per hour for entire crew when a helicopter job.

Above rates apply on Switching Structures, Maintenance projects, Railroad Catenary install/maint, Third rail installation, Bonding of Rails and pipe type cable and installation of Fiber Optic Cable.

Lineman /Techician	$ 37.56	$ 39.67	$ 41.78
Welder/Cable Splicer	37.56	39.67	41.78
Digging Machine Operator	33.80	35.70	37.60
Tractor Trailer Driver	31.93	33.72	35.51
Truck Driver/Groundman	30.05	31.74	33.42
Mechanic 1st Class	30.05	31.74	33.42
Flagman	22.54	23.80	25.07

Additional 1.00 per.hr.for entire crew when a helicopter is used.

Above rates applicable on all overhead and underground distribution and maintenance work, and all overhead and underground transmission line work and the installation of Fiber Optic Cable where no other construction trades are or have been involved.

Lineman/Technician	$ 37.56	$ 39.67	$ 41.78
Cable Splicer pipe type cable	41.32	43.64	45.96
Certified Welder pipe type	39.44	41.65	43.87
Digging Machine Operato	33.80	35.70	37.60
Tractor Trailer Driver	31.93	33.72	35.51
Mechanic 1st Class	30.05	31.74	33.42
Truck Driver/Groundman	30.05	31.74	33.42
Flagman	22.54	23.80	25.07

Additional $ 1.00 per hour for entire crew when a helicopter is used.

Above rates applicable on all electrical sub-stations, switching structures, fiber optic cable and all other work not defined as "Utility outside electrical work"

SUPPLEMENTAL BENEFITS

Per hour worked including holidays listed below:

The following SUPPLEMENTAL benefits apply to all classification categories of CONSTRUCTION, TRANSMISSION and DISTRIBUTION.

$ 11.75
*plus
7% of hourly wage paid.

OVERTIME PAY

See (B, E, Q,) on OVERTIME PAGE. Double time for all emergency work designated by the Dept. of Jurisdiction.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1st shift	8:00 AM to 4:30 PM REGULAR RATE
2nd shift	4:30 PM to 1:00 AM REGULAR RATE PLUS 17.3 %
3rd shift	12:30 AM to 9:00 AM REGULAR RATE PLUS 31.4 %

HOLIDAY

Paid	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Gov. Election Day.
Overtime	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Gov. Election Day.

SUPPLEMENTS for holidays paid at straight time

REGISTERED APPRENTICES

(1000) hr terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked:

The following SUPPLEMENTAL benefits apply to all classification categories of CONSTRUCTION, TRANSMISSION and DISTRIBUTION.

$ 11.75
*plus
7% of hourly wage paid

*NOTE: The 7% is based on the hourly wage paid, straight time rate or premium rate.

6-1249a

Lineman Electrician - Teledata — 07/01/2007

JOB DESCRIPTION Lineman Electrician - Teledata **DISTRICT** 6

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

Per hour:

For work outside building property lines****

**** EXCLUDES Teledata work within ten feet of High Voltage (600 volts and over) transmission lines. For this work please see LINEMAN.

	01/01/2007
Cable Splicer	$ 24.85
Installer/Repairman	23.60
Teledata Lineman	23.60
Technician/Equip oper	23.60
Groundman	12.51

SUPPLEMENTAL BENEFITS

Per hour worked:

4.43
*plus 3% of
hourly wage
paid

*NOTE: The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

Lineman Electrician - Traffic Signal Lighting — 07/01/2007

JOB DESCRIPTION Lineman Electrician - Traffic Signal Lighting **DISTRICT** 6

ENTIRE COUNTIES
Columbia, Dutchess, Orange, Putnam, Rockland, Ulster

WAGES
Per hour:

For all Lighting and Traffic Signal Systems.

	07/01/2007	05/05/2008	05/04/2009
Certified welder	$ 37.54	$ 39.50	$ 41.48
Lineman/Technician	35.75	37.62	39.50
Digging Machine	32.18	33.86	35.55
Tractor Trailer driver	30.39	31.98	33.58
Truck Driver/Groundman	28.60	30.10	31.60
Mechanic 1st Class	28.60	30.10	31.60
Flagman	21.45	22.57	23.70

Above rates applicable on ALL Lighting and Traffic Signal Systems and the installation, testing, operation, maintenance and repair of all traffic control and illumination projects, traffic monitoring systems, road weather information systems and the installation of Fiber Optic Cable.

SUPPLEMENTAL BENEFITS
Per hour worked including listed holidays:

$11.75
*plus
6.5% of hourly wage paid

*NOTE: The 6.5% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY
See (B, E, Q,) on OVERTIME PAGE. Note* Double time for all emergency work designated by the Dept of Jurisdiction.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM TO 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM REGULAR RATE PLUS 31.4%

HOLIDAY
HOLIDAY:

Paid	See (5, 6, 8, 13, 25) on HOLIDAY PAGE and Gov Election Day.
Overtime	See (5, 6, 8, 13, 25) on HOLIDAY PAGE and Gov Election Day.

Supplements paid at STRAIGHT TIME rate for holidays.

The following apprentice rates and the following supplemental benefits apply to all classifications.

REGISTERED APPRENTICES
(1000) hr terms at the following percentage of journeyman wage

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

6-1249aReg8LT

Lineman Electrician - Tree Trimmer **07/01/2007**

JOB DESCRIPTION Lineman Electrician - Tree Trimmer **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES
Per hour:

Applies to line clearance, tree work and right-of-way preparation on all new or existing overhead electrical, telephone and CATV lines.

	07/01/2007
Tree trimmer	$ 20.40
Equip Operator	18.00
Mechanic	18.00
Truck Driver	15.21
Ground person	12.49
Flag person	8.89

SUPPLEMENTAL BENEFITS
Per hour worked:

$ 5.35
*plus 3% of
hourly wage paid

Supplements paid at STRAIGHT TIME rate for holidays.

*NOTE: The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 8, 10, 15, 16) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 10, 15, 16) on HOLIDAY PAGE

6-1249TT

Mason - Building — 07/01/2007

JOB DESCRIPTION Mason - Building **DISTRICT** 1

ENTIRE COUNTIES
Dutchess, Sullivan, Ulster

PARTIAL COUNTIES
Orange: Entire county except the Township of Tuxedo.

WAGES
Per hour

	07/01/2007
Bricklayer	$ 35.11
Cement Mason Bldg	35.11
Plasterer/Stone Mason	35.11
Pointer/Caulker	35.11

Additional $1.00 per hour for power saw work
Additional $0.50 per hour for swing scaffold or staging work

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman	$ 21.25

OVERTIME PAY
Cement Mason: See (D, E2, O) on OVERTIME PAGE.
All Others: See (B, E, E2, Q) on OVERTIME PAGE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

One Half Year terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour worked

1st & 2nd terms	$10.625
All others	21.25

1-5du-b

Mason - Heavy&Highway — 07/01/2007

JOB DESCRIPTION Mason - Heavy&Highway **DISTRICT** 1

ENTIRE COUNTIES
Dutchess, Sullivan, Ulster

PARTIAL COUNTIES
Orange: Entire county except the Township of Tuxedo.

WAGES
Per hour

	07/01/2007
Bricklayer	$ 35.61
Cement Mason	35.61
Marble/Stone Mason	35.61
Plasterer	35.61
Pointer/Caulker	35.61

Additional $1.00 per hour for power saw work
Additional $0.50 per hour for swing scaffold or staging work

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman	$ 21.25

OVERTIME PAY
See (B, O) on OVERTIME PAGE

HOLIDAY

Paid:	See (5, 6, 15, 25) on HOLIDAY PAGE
Overtime:	See (5, 6, 15, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

One Half Year terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour worked

1st & 2nd terms	$ 10.625
All others	21.25

1-5du-H/H

Operating Engineer - Building — 07/01/2007

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

PARTIAL COUNTIES
Dutchess: (*NOTE: This description is in effect up to 08/31/2006). *South of a West/East line through Dutchess County starting at the Northern Boundary of the City of Poughkeepsie.
(**NOTE: This change takes effect on 09/01/2006)**The part of Dutchess (defined by the northern boundary line of City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to VanWagner Road, then north along VanWagner Road to Bower Road, then east along Bower Road to Rte. 44, and along Rt. 44 east to route 343, then along route 343 east to the northern boundary of Town of Dover Plains, and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut,and bordered on the west by the middle of the Hudson River).

WAGES
GROUP I: Cranes(All Types), Boom Trucks, Cherry Pickers(All Types), Clamshell Crane, Derrick(Stone-Stell), Dragline, Franki Pile Rig or

similar Hydraulic Cranes, Pile Drivers(All Types).
*All Tower Cranes, all Climbing Cranes and all Cranes of 100 ton capacity or greater.

GROUP I-A: Barber Green Loader-Euclid Loader, Bulldozer, Carrier-Trailer Horse, Concrete Cleaning Decontamination Machine Operator,Concrete-Portable Hoist, Conway or Similar Mucking Machines, Elevator & Cage, Excavators all types, Front End Loaders, Gradall, Shovel, Backhoe, etc.(Crawler or Truck), Heavy Equipment Robotics Operator/Mechanic, Hoist Engineer-Material, Hoist Portable Mobile Unit, Hoist-Single, Double or Triple Drum, Horizontal Directional Drill Locator, Horizontal Directional Drill Operator,and Jersey Spreader, Letourneau or Tournapull(Scrapers over 20 yards Struck), Lift Slab Console, etc., Lull HiLift or Similar, Maintenance Engineer, Master Environmental Maintenance Mechanics, Mucking Machines Operator/Mechanic or Similar Type, Overhead Crane, Pavement Breaker(Air Ram), Paver(Concrete), Post Hole Digger, Power House Plant, Road Boring Machine, Road Mix Machine, Ross Carrier and Similar Machines, Rubber tire double end backhoes and similar machines, Scoopmobile-Tractor-Shovel Over 1.5 yards, Shovel (Tunnels Side Boom, Spreader (Asphalt Telephies(Cableway), Tractor Type Demolition Equipment, Trenching Machines-Vermeer Concrete Saw Trencher and Similar, Ultra High Pressure Waterjet Cutting Tool System, Vacuum Blasting Machine operator/mechanic, Winch Truck A Frame).

GROUP I-B: Compressor (Steel Erection), Mechanic (Outside All Types, Negative Air Machine (Asbestos Removal), Pulse Meter, Push Button (Buzz Box), Elevator, Welder.

GROUP II-A: Bulldozer D6 and Under, Compactor Self-Propelled, Grader, Machines Pulling Sheep's Foot Roller, Roller 4 ton and over, Scrapers-20 yards Struck and Under, Vibratory Rollers, etc.

GROUP III-A: Asphalt Plant, Boiler (High Pressure), Concrete Mixing Plants, Concrete Pump, Fireman, Forklift, Forklift (Electric) Joy Drill or similar Tractor Drilling Machine, Loader-1 1/2 yards and under, Locomotive (All Sizes), MixerConcrete-21E and over, Portable Asphalt Plant, Portable Batch Plant, Portable Crusher, Quarry Master, StoneCrusher, Well Drilling Machine, Well Point System, Concrete Buggy, One Yard and Up Ride on Dumper, Benford or Similar,Bobcat.

GROUP III-B: Compressor Over 125 cu.Feet, Conveyor Belt Machine Regardless of Size, Compressor Plant, Ladder Hoist, Lighting Unit (Portable & Generator), Stud Machine, Welding Machine (Steel Erection & Excavation).

GROUP IV-A: Air Tractor Drill, Batch Plant, Bending Machine, Concrete Breaker, Concrete Spreader, Curb Cutter Machine, Farm Tractor (all types), Finishing Machine-Concrete, Material Hopper-sand stone-cement, Mixer-Concrete-Under 21E, Mulching Grass Spreader, Pump-Gypsum etc, Fine Grading Machine, Roller under 4 Ton Hepa Vac Clean Air Machine, Spreading and Fine Grading Machine, Steel Cutting Machine, Siphon Pump-air-steam, Tar Joint Machine, Turbo Jet Burner or Similar Equipment, Vibrator (1 to 5), Fine Grading Machine, Roof Hoist (Tugger Hoist), Television Cameras for Water, Sewer, Gas etc. Pump-Plaster-Grout-Fireproofing.

GROUP IV-B: Compressor to 125 feet, Dust Collector, Heater all types, Pump, Pump Station (Water and Sewer), Steam Jenny, Sweeper, Chipper, Mulcher.

GROUP V-A: Concrete Saw, Oiler Fuel Truck, Oiler Grease Truck.

GROUP V-B: Mechanics Helper, Oiler, Stock Attendant, Paint Compressor, Welder's Helper, Motorized Roller (walk behind).

GROUP VI-A: Master Mechanic, Assistant Master Mechanic, Helicoper Hoist Operator, Helicopter Pilot, Helicopter Signal Man, Welder Certified.

GROUP VI-B: Utility Man, Warehouse Man, Second Engineer, Cable Splicer.

WAGES: (per hour)

	07/01/2007	03/03/2008
GROUP I	$ 44.87	46.18
*Tower Cranes	50.77	52.32
GROUP I-A	39.15	40.25
GROUP I-B	36.06	37.02
GROUP II-A	37.78	38.81
GROUP III-A	36.37	37.34
GROUP III-B	34.59	35.49
GROUP IV-A	36.00	36.96
GROUP IV-B	30.32	31.05
GROUP V-A	34.49	35.49
GROUP V-B	32.75	33.57
GROUP VI-A		
Master Mechanic	41.16	42.32
Asst.Master Mechanic	35.08	36.00
Helicopter Hoist Oper	39.87	40.98
Helicopter Pilot	45.52	46.86
Helicopter Signal Man	35.63	36.51
Welder Certified	38.46	39.51
GROUP VI-B		
Utility Man	31.03	31.79
Warehouse Man	32.56	33.38
Second Engineer	32.62	33.45
Cable Splicer	35.76	36.70

An additional 20% to wage when required to wear protective equipment on hazardous/toxic waste projects.
Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional $2.00 per hour. Engineers operating cranes with booms 149 feet or over in length will be paid an additional $3.00 per hour.
Loader operators over 5 cubic yard capacity additional .50 per hour.
Shovel operators over 4 cubic yard capacity additional $1.00 per hour.

SUPPLEMENTAL BENEFITS
(per hour)

Journeyman	$ 14.67 Per hour paid	$16.02
	+7.10 Per hour worked	+7.15

OVERTIME PAY
OVERTIME:..... See (D, O, U*, V) on OVERTIME PAGE.

HOLIDAY
HOLIDAY:
Paid:..... See (5, 6, 7, 8, 11, 12) on HOLIDAY PAGE.
Overtime:..... See (5, 6, 7, 8, 11, 12) on HOLIDAY PAGE.
* Note: For Holiday codes 5 & 6, code T applies.
Note: If employees are required to work on Easter Sunday they shall be paid at the rate of triple time.

8-137B

Operating Engineer - Building **07/01/2007**

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES
Dutchess: Northern part of Dutchess (to the northern boundary line of City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedelt Road, then east along Bedelt Road to VanWagner Road, then north along VanWagner Road to Bower Road, then east along Bower Road to Rte. 44, and along Rt. 44 east to route 343, then along route 343 east to the northern boundary of Town of Dover Plains, and east along the northern boundary of Town of Dover Plains to Connecticut).
Herkimer: East of a North/South line through the RailroadStation at Little Falls.

WAGES
Master Mechanic:

CLASS A1:
Crane, Hydraulic Cranes, Tower Crane, Locomotive Crane, Piledriver, Cableway, Derricks, Whirlies, Dragline, Boom truck over 5 ton.

CLASS A:
Maintenance Engineer, Self-Contained Crawler Drill, Hydraulic Rock drill,shovel, All Excavators including rubber tire & full swing. Backhoe(except tractor mtd. rubber tired), Gradalls, Power road grader, all CMI equipment, Front-end rubber tire loader, Tractor-mounted drill (quarry master), Mucking machine, Concrete central mix plant, Concrete pump, Belcrete system, Automated asphalt concrete plant, Tractor road paver, Boom Trucks 5 ton & under.

CLASS B:
Backhoe(rubber tired backhoe/loader combination), Bulldozer, Push cat, Tractor, Traxcavator, Scraper, LeTourneau grader, Form fine Grader, Road Roller, Blacktop Roller, Blacktop Spreader, Power Brooms, Sweepers, Trenching Machine, Barber Greene loader, Side booms, Hydro hammer, Concrete spreader, Concrete finishing machine, One Drum Hoist, Power Hoisting(single drum), hoist-two drum or more, 3 Drum Eng., power hoisting (2 drum & over) 2 & 3 Drum & Swing Engine, Hod Hoist, A-L Frame Winchs, Core & Well Drillers(one drum), Post Hole Digger, CHB Vibro Tamp or Similar Mach. Batch Pin & Plant Oper., Dinky Locom., Skid Steer loader, Track excav. 5/8 cu yd or under.

CLASS C:
Forklift, High Lift, Lull, Oiler, Fireman and Heavy-duty Greaser, Boilers, Steam Generators, Vibrator, Mortar Mixer, Air Compressor, Dust Collector, Welding Machine, Well Point, Mechanical Heater, Generators, Temporary Light Plants, Concrete Pumps, Electric Submersible Pump 4" and over, Murphy type diesel generator, Conveyor, Elevators, Concrete Mixer and Belcrete power pack (Belcrete system), Seeding & Mulching Machines, Pumps and Pump Truck.

* In the event that equipment listed above is operated by robotic control, the classification covering the operation will be the same as if manually operated.

WAGES per hour

	07/01/2007
Master Mechanic	$ 32.30
Class # A1	31.19
Class # A	30.75
Class # B	29.84
Class # C	27.27

Cranes: over 150 ft add .50 per hr, Cranes: over 200 ft add 1.00 per hr, tower Cranes add .50 per hr over class A1 rate.

Additional $ 2.50 per hr. for hazardous or toxic waste work.
Additional $ 2.00 per hr over B rate for Nuclear Leader work.
Additional $ .40 per hr for tunnel or excavation of shaft 40' or more deep.

SUPPLEMENTAL BENEFITS
Per hour paid

Journeyman	$ 16.27

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

1000 hours terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th
60% of	70% of	80% of	90% of
Class B	Class B	Class B	Class B

Supplemental Benefits per hour paid

All classes	$ 12.47

1-106b

Operating Engineer - Heavy&Highway **07/01/2007**

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 9

ENTIRE COUNTIES
Dutchess, Putnam, Westchester

WAGES
NOTE: Also covers Feasibility and Preliminary Design surveying, Line and Grade surveying for Inspection or Supervision of Construction when preformed under a Consulting Engineer Agreement.
Party Chief - One who directs a survey party
Instrument Man - One who runs the instrument and assists Party Chief
Rodman - One who holds the rod and in general, assists the Survey Crew
Catorgories cover GPS & Underground Suveying

Per Hour:	07/01/2007-06/30/2008	07/01/2008
Party Chief	$ 49.91	Add $ 3.40/Hr
Instrument Man	36.42	Add 2.76/Hr
Rodman	31.53	Add 2.53/Hr

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2007-06/30/2008	07/01/2008
All Catorgories	$ 21.64	$ 21.64

OVERTIME PAY
See (B, *E, Q) on OVERTIME PAGE
* Doubletime paid on the 9th hour on Saturday.

HOLIDAY
Paid: See (5, 6, 7, 11, 12) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 11, 12) on HOLIDAY PAGE

9-15Dh

Operating Engineer - Heavy&Highway **07/01/2007**

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

PARTIAL COUNTIES
Dutchess: (*NOTE: This description is in effect up to 08/31/2006). *South of a West/East line through Dutchess County starting at the Northern Boundary of the City of Poughkeepsie.
(**NOTE: This change takes effect on 09/01/2006)**The part of Dutchess (defined by the northern boundary line of City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to VanWagner Road, then north along VanWagner Road to Bower Road, then east along Bower Road to Rte. 44, and along Rt. 44 east to route 343, then along route 343 east to the northern boundary of Town of Dover Plains, and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut,and bordered on the west by the middle of the Hudson River).

WAGES
GROUP I: Boom Truck, Cherry Picker, Clamshell, Crane, (Crawler, Truck), Dragline,Rough Terrain Crane.

GROUP I-A: Auger, Auto Grader, Dynahoe and Dual purpose and similar machines, Barber Green Loader-Euclid Loader or similar type machine, boat captain, boring machine(all types), Bulldozer-All Sizes, Central Mix Plant Operator, Cherry Picker(Cableway)-Hydraulic, chipper (all types), close circuit t.v., Compactor with Blade,Concrete Portable Hoist, C.M.I. or Similar, Conway or Similar Mucking Machines, Gradall, Shovel Backhoe, etc. Grader, Derrick (Stone-Steel) Elevator & Cage, Front End Loaders over 1 1/2yds Hoist Single, Double, Triple Drum, Hoist Portable Mobile Unit, Hoist Engineer Concrete(Crane-Derrick-Mine Hoist), Hoist Engineer-Material, Hydraulic Boom, Letourneau or Tournapull (Scrapers over 20 yds struck), Mucking Machines, Overhead Crane, Paver (concrete) Pulsemeter, Push Button (Buss Box) Elevator, Road Mix Machines, Ross Carrier and similar, Shovels (Tunnels), SideBoom, Spreader (asphalt), Scoopmobile-Tractor-Shovel over 1 1/2 yards, Trenching Machines, Telephies-Vermeer Concrete Saw Trencher and/or Similar, Tractor type Demolition Equipment, Whirly,P-811 Track Renewal Machine-Similiar.

GROUP I-B: Road Paver-Asphalt.

GROUP II-A: Balast regulators, Compactor Self Propelled, Cow Tracks, Fusion Machine, Rail Anchor Machines, Scrapers-20 yds truck and under, Switchtampers, Vibrator Roller, etc., Roller 4 ton and over, Welder.

GROUP II-B: Mechanic-All Types.

GROUP III: Air Tractor Drill, Asphalt Plant, Batch Plant, Boiler (High Pressure), Concrete Breaker, Concrete Pump, Concrete Spreader, Curb Cutter Machine, Farm Tractor (All Types), Finishing Machine (Concrete) Fine Grading Machine, Fireman, Forklift, Forklift (Electric) John Henry drill or similar, Joy Drill or similarTractor Drilling Machine, Loader 1 1/2 yards and under, Locomotive(All Sizes), Maintenance Engineer, Machine Pulling Sheep's Foot Roller, Material Hopper, Mixer Concrete-21E and over, Mulching Grass Spreader, Portable Plant, Portable Batch Plant, Portable Crusher, Powerhouse Plant, Quarry Master,Roller under 4 ton, Spreading and Fine Grading Machine, Steel Cutting Machine, Stone Crusher, Sweeper, Turbo JetBurner or Similar, Well Drilling Machine, Winch Truck, "A" Frame Truck.

GROUP IV-A: Service Man (Fuel Truck), Service Man (Grease Truck).

GROUP IV-B: Compressor-Compressor Plant-Paint Compressor-Steel Erection, ConveyorBelt Machine, Lighting Unit (Portable & Generator), Pilot/Assistant Engineer/2 seated, Pumps-Pump Station-Water-Sewer-Gypsum-Plaster, etc., Pump Truck(Sewer Jet or Similar), Roller-Motorized (Walk Behind), Welding Machine Steel Erection Excavation), Well Point System, Welder's Helper, Mechanic's Helper, Bending Machine, Dust Collector, Mixer Concrete under 21-E, Heater all types, Steam Jenny, Stock Room Attendant, Siphon Pump-Air-Steam, Tar Joint Machine, Vibrator (1 to 5), Compressor Truck mounted (2-6).

GROUP V-A: Master Mechanic, Master Mechanic Asst., Helicopter Hoist Operator, Engineer-All Tower Cranes-All Climbing Cranes and all cranes of 100 ton capacity or greater(3900 Manitowac or similar), Hoist Engineer(Steel), Engineer-Pile Driver, Welder-Certified, Helicopter Pilot, Helicopter Signalman, Jersey Spreader, Pavement Breaker(Air Ram), Post Hole Digger.

GROUP V-B: Concrete Saw, Oiler, Utility Man.

WAGES: (per hour)

	07/01/2007
Group I	$ 43.33
Group I-A	38.13
Group I-B	39.52
Group II-A	36.49
Group II-B	36.65
Group III	35.84
Group IV-A	32.52
Group IV-B	27.84
Group V-A	
Master Mechanic/Asst	40.41
Helicopter Hoist Oper	39.13
Engineer All Tower,Climbing and Cranes of 100 Tons	49.16
Hoist Engrineer(Steel)	43.80
Engineer(Pile Driver)	43.80
Welder(Certified)	37.62
Helicopter Pilot	43.80
Helicopter Signalman	36.31
Jersey Spreader,Pavement Breaker. (Air Ram)Post Hole Digger	36.65
Group V-B	
Utility Man	26.47
Concrete Saw	30.36
Oiler	26.04

SHIFT DIFFERENTIAL: On all NYS D.O.T. and other Governmental mandated off-shift work, an additional 15% of wage on straight time hours.

An additional 20% to wage when required to wear protective equipment on hazardous/toxic waste projects. Operators required to use two buckets pouring concrete on other than road pavement shall receive $0.50 per hour over scale. Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional $2.00 per hour. Engineers operating cranes with booms 149 feet or over in length will be paid an additional $3.00 per hour. Operators of shovels with a capacity over (4) cubic yards shall be paid an additional $1.00 per hour. Operators of loaders with a capacity over 5 cubic yards shall be paid an additional $0.50 per hour.

SUPPLEMENTAL BENEFITS

(per hour)

	07/01/2007
Journeyman:	$ 15.03 Per hour paid. + 7.35 Per hour for first 40 hours worked. + 0.70 Per hour worked.

OVERTIME PAY
OVERTIME:.... See (B, E, Q, U*, V) on OVERTIME PAGE.

HOLIDAY
HOLIDAY:
Paid:..... See (5, 6, 7, 8, 11, 12) on HOLDIAY PAGE.
Overtime:.... See (5, 6, 7, 8, 11, 12) on HOLIDAY PAGE.
* Note: For Holiday codes 5 & 6, code U applies.
Note: If employees are required to work on Easter Sunday they shall be paid at the rate of triple time.

REGISTERED APPRENTICES
(1)year terms at the following rate.

	07/01/2007
1st term	$ 17.92
2nd term	21.50
3rd term	25.09
4th term	28.67

Supplemental Benefits per hour:

Apprentices: $ 15.05 Per hour paid.
+ 7.35 Per hour for first 40 hours worked.
+ 0.70 Per hour worked.

8-137HH

Operating Engineer - Heavy&Highway — 07/01/2007

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 1

ENTIRE COUNTIES
Albany, Broome, Chenango, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Tioga, Warren, Washington

PARTIAL COUNTIES
Dutchess: (*NOTE: This description is in effect up to 08/31/2006). *North of a West/East line through Dutchess County starting at the Northern Boundary of the City of Poughkeepsie.
(**NOTE: This change takes effect on 09/01/2006)**The part of Dutchess (defined by the northern boundary line of City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to VanWagner Road, then north along VanWagner Road to Bower Road, then east along Bower Road to Rte. 44, and along Rt. 44 east to route 343, then along route 343 east to the northern boundary of Town of Dover Plains, and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut,and bordered on the west by the middle of the Hudson River).
Herkimer: East of a North/South line through the RailroadStation at Little Falls.

WAGES
MASTER MECHANIC:

CLASS 1A:
Crane, Cherry Picker(over 5 ton capacity, Derricks (steel erection) Dragline, Overhead Crane (gantry or straddle), Piledriver, Boom Truck (Over 5 tons).

CLASS A:
Automated Concrete Spreader(CMI Type), Automatic Fine Grader, Backhoe(except tractor-mounted,rubber tired), Backhoe Excavator Full Swing (CAT 212 or similar), Belt Placer(CMI Type), Blacktop Plant (automated), Cableway,Caisson Auger, Central Mix Concrete Plant (automated), Concrete Pump(8" or over), Dredge, Dual Drum Paver, Excavator (all purpose-hydraulic Gradall or Similar), Profiler (over 105 H.P.), Front End Loader (4c.y.& over), Head Tower (Sauerman or equal), Hoist (two or three Drum), Mine Hoist, Holland Loader, Mucking Machine or Mole, Power Grader, Quad 9, Quarry Master (or equivalent),Scraper, Shovel, Side Boom, Slip Form Paver (If second man is needed, he shall be an Oiler), Tractor Drawn Belt Type Loader, Truck or Trailer Mounted Chipper(self-feeding), Tug & Operator (manned, rented equipment excluded) & Tunnel Shovel, Maintenance Engineer, Concrete Curb Machine, Self-Propelled Slip Form, Boom Truck 5 tons and under,Directional Drilling Machine,Back Filling Machine, Side Boom, Pavement Breaker (sp) Wertgen;PB-4 & similar type.

CLASS B:

Backhoe (Tractor-Mounted,Rubber Tired), Bituminous Spreader & Mixer, Blacktop Plant (non-automated), Blast or Rotary Drill (Truck or Tractor Mounted), Boring Machine, Cage Hoist, Central Mix Plant(Non Automated), All Concrete Batching Plants, Cherry Picker (5 ton capacity & under), Compressors (4 or less exceeding 2000 cfm combined capacity), Concrete Paver over 16S, Concrete Pump(Under 8"), Bituminous Recycling machine Crawler Drill Self Contained, Crusher, Diesel Power Unit, Drill Rigs (Tractor Mounted), Front End Loader(under 4 c.y.), Hi-Pressure Boiler (15 lbs.& over), Hoist(One Drum), Kolman Plant Loader & similar type loaders(if employer requires another man, he shall be Oiler), L.C.M.Work Boat Operator, Locomotive, Greaseman/Lubrication Eng, Welder, Mixer(for stabilized base-self propelled), Monorail Machine,Plant Engineer, Profiler (105 H.P.or under), Pump Crete, Ready Mix Concrete Plant, Refrigeration Equipment (for soil stabilization), Road Widener, Roller(all above sub-grade), Sea Mule,Tractor with Dozer and/or Pusher, Trencher, Tugger Hoist, Winch and Winch Cat, Hydro-Axe, Pug Mill, Skidder, Self-contained Ride-on Rock Drill, excluding Air-Track type drill.

CLASS C:
A Frame(Winch Hoist on)Truck, Ballast Regulator(ride on) Bituminous Heater Self-Propelled, Concrete Pavement Spreaders and Finishers, Conveyor, Drill (core), Drill (well), Farm Tractor with Accessories, Fine Grade Machine, Fork Lift, Grout Pump, Gunite Machine, Hammers(hydraulic-self propelled); Hydra-Spiker(ride-on); Hydro-Blaster(water),Power Sweeper, Post Hole Digger & Post Driver, Roller(grade & fill), Scarifier(ride-on), Span Saw(ride-on) Tamper(ride-on), All ride-on Tie Extractors, Tie Handlers, Tie Spacers, Tie Inserters & Track Liners, Tractor(with towed access.), Vibratory Compactor, Vibro Tamp, Well Point, Tire repair, Skid Steer Bobcat or similar loader, Aggregate Plant, Boiler (used with production), Cement and bin Operator, Compressors, Dust Collectors, Generators, Pumps, Welding Machines, Light Plants, Heaters Concrete Paver or Mixer (165 & under), Concrete Saw (self propelled), Form Tamper, Fireman, Hydralic Pump (jacking system) Mulching Machine, Oiler, Parapet concrete or pavement grinder, Power Broom (towed), Power Heaterman, Revinius Widener, Shell Winder, Steam Cleaner, Tractor, Directional Drilling Machine Locator, Pump Truck.

* In the event that equipment listed above is operated by robotic control, the classification covering the operation will be the same as if manually operated.

WAGES per hour

	07/01/2007
Master Mechanic	$ 32.36
Class 1A	31.18
Class A	30.75
Class B	29.84
Class C	27.27

ALL EMPLOYEES WHO WORK A SINGLE IRREGULAR SHIFT STARTING FROM 5:00 PM TO 1:00 AM THAT IS GOVERNMENTALLY MANDATED NIGHT WORK, SHALL BE PAID AN ADDITIONAL $2.00 PER HOUR.
$0.50 per hr additional for Crane with Boom length & gib 150ft. and over.
$1.00 " " " " " " " " " " 200ft. " "
Additional $2.50 per hr. for hazardous or toxic waste work.

SUPPLEMENTAL BENEFITS
Per hour paid

Journeyman	$ 16.45

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (5, 6) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

1000 hours terms at the following percentage of Journeyman's wage Class B

1st	2nd	3rd	4th
60%	70%	80%	90%

Supplemental Benefits per hour paid

All Terms	$ 12.45

1-106h

Operating Engineer - Heavy&Highway - Tunnel — 07/01/2007

JOB DESCRIPTION Operating Engineer - Heavy&Highway - Tunnel **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

PARTIAL COUNTIES

Dutchess: (*NOTE: This description is in effect up to 08/31/2006). *South of a West/East line through Dutchess County starting at the Northern Boundary of the City of Poughkeepsie.
(**NOTE: This change takes effect on 09/01/2006)**The part of Dutchess (defined by the northern boundary line of City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to VanWagner Road, then north along VanWagner Road to Bower Road, then east along Bower Road to Rte. 44, and along Rt. 44 east to route 343, then along route 343 east to the northern boundary of Town of Dover Plains, and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut,and bordered on the west by the middle of the Hudson River).

WAGES

GROUP I: Boom Truck, Cherry Picker, Clamshell, Crane(Crawler, Truck), Dragline, Rough Terrain Crane.

GROUP I-A: Auger, Auto Grader, Dynahoe & Dual purpose & similar machines, Barber Green Loader-Euclid Loader or similar type machine, Boat Captain, Boring Machine(all types), Bull Dozer-all types, Central Mix Plant Operator, Cherry Picker(Cableway or hydraulic), Chipper-all types, Close Circuit T.V., Compactor with Blade, Concrete Portable Hoist, C.M.I. or similar, Conway or similar Mucking Machine, Crane(Crawler or Truck) dragline, Gradall, Shovel Backhoe, etc. Grader, Derrick(Stone-Steel), Elevator & Cage(materials or passengers), Front End Loaders over 1 1/2 yards, Hoist Single, Double, Triple Drum, Hoist Portable Mobile Unit, Hoist Engineer-Concrete(Crane-Derrick-Mine Hoist), Hoist Engineer-Material, Hydraulic Boom, Letourneau or Tournapull(Scrapers over 20 yards struck), Log Skidder, Moveable Concrete Barrier Transfer & Transport Vehicle, Mucking Machines. Overhead Crane, Paver(concrete), Pulsemeter, Push Button(Buzz Box)Elevator, Raise Boring Machine, Road Mix Machines. Robot Hammer(Brock or similar), Ross Carrier and similar machines, Shovels(Tunnels), Side Boom, Slip Form Machine, Spreader(Asphalt), Scoopmobile-Tractor-Shovel over 1 1/2 yards, Trenching Machines, Telephies-Vermeer Concrete Saw Trencher and/or similar, Tractor type demolition equipment, Whirly.

GROUP I-B: Road Paver(Asphalt).

GROUP II-A: Balast Regulators, Compactor Self-propelled, Cow Tracks, Fusion Machine, Rail Anchor Machines, Roller 4 ton and over, Scrapers (20 yard struck and under), Switch Tampers, Vibratory Roller, etc., Welder.

GROUP II-B: Mechanic(outside) all types, Shop Mechanic.

GROUP III: Air Tractor Drill, Asphalt Plant, Batch Plant, Boiler (High Pressure), Concrete Breaker, Concrete Pump, Concrete Spreader, Curb Cutter Machine, Farm Tractor(all types), Finishing Machine(Concrete) Fine Grading Machine, Firemen, Forklift, Forklift(Electric), John Henry Drill or similar, Joy Drill or similar Tractor Drilling Machine, Loader 1 1/2 yards and under, Locomotive(all sizes), Maintenance Engineer, Machine Pulling Sheeps Foot Roller, Material Hopper, Mixer Concrete(21-E & over), Mulching Grass Spreader, Portable Asphalt Plant, Portable Batch Plant, Portable Crusher, Powerhouse Plant, Quarry Master, Roller under 4 ton, Spreading and Fine Grading Machine, Steel Cutting Machine, Stone Crusher, Sweeper, Turbo Jet Burner or similar, Well Drilling Machine, Winch Truck "A' Frame.

GROUP IV-A: Service Man(Fuel Truck), Service Man(Grease Truck).

GROUP IV-B: Bending Machine, Compressor-Compressor Plant-Paint, Compressor-Steel Erection, Compressor Truck Mounted(2-6), Conveyor Belt Machine, Dust Collector, Heater(all types), Lighting Unit(portable & generator), Mixer Concrete under 21-E, Pilot/Assistant Engineer/2 seated, Pumps-Pump Station-Water-Sewer-Gypsum-Plaster, etc., Pump Truck(Sewer Jet or similar), Roller Motorized(Walk behind), Steam Jenny, Stock Room Attendant, Syphon Pump-Air-Stream, Tar Joint Machine, Vibrator(1 to 5), Welding Machine, Welders Helper.

GROUP V-A: Engineer(Pile Driver), Engineer(all Tower Cranes, all Climbing Cranes & all cranes of 100 ton capacity or greater), Helicopter Hoist Operator, Helicopter Pilot, Helicopter Signalman, Hoist Engineer(Steel-Sub Structure), Engineer-Pile Driver, Jersey-Spreader, Pavement breaker(Air Ram), Master Mechanic, Asst. Master Mechanic, Post Hole Digger, Welder-Certified.

GROUP V-B: Concrete Saw, Oiler, Utility Man.

WAGES: (per hour)

	07/01/2007
GROUP I	$ 33.99
GROUP I-A	31.80
GROUP I-B	32.90
GROUP II-A	30.51
GROUP II-B	30.63
GROUP III	30.00
GROUP IV-A	27.38
GROUP IV-B	23.71
GROUP V-A	
Engineer-Pile Driver	34.35
Engineer-Cranes	38.56
Helicopter Pilot	36.91
Helicopter Signalman	30.37
Helicopter Hoist Opr	32.59
Hoist Engineer	34.35
Jersey Spreader,	

Pavement Breaker(Air Ram),	
Post Hole Digger	30.64
Master Mechanic	33.60
Asst. Master Mechanic	33.60
Welder-Certified	31.40
GROUP V-B	
Concrete Saw	22.29
Oiler	22.29
Utility Man	22.62

An additional 20% to wage when required to wear protective equipment on hazardous/toxic waste projects. Operators required to use two buckets pouring concrete on other than road pavement shall receive $0.50 per hour over scale. Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional $2.00 per hour. Engineers operating cranes with booms 149 feet or over in length will be paid an additional $3.00 per hour. Operators of shovels with a capacity over (4) cubic yards shall be paid an additional $1.00 per hour. Operators of loaders with a capacity over (5) cubic yards shall be paid an additional $0.50 per hour.

SUPPLEMENTAL BENEFITS
(per hour)

Journeyman: $ 9.76 all hours paid.
+ 6.00 for first 40 hours worked.
+ 0.35 for all hours worked.

OVERTIME PAY
See (D, O, *U, V) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 7, 8, 11, 12) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 8, 11, 12) on HOLIDAY PAGE
* Note: For Holiday codes 5 & 6, code U applies.
Note: If employees are required to work on Easter Sunday, they shall be paid at the rate of triple time.

REGISTERED APPRENTICES
(1)year terms at the following rates.

1st	2nd	3rd	4th
$ 15.00	$ 18.00	$ 21.00	$ 24.00

Supplemental Benefits per hour:

Apprentices: $ 9.76 all hours paid.
+ 0.35 all hours worked.

8-137Tun

Operating Engineer - Marine Construction — 07/01/2007

JOB DESCRIPTION Operating Engineer - Marine Construction **DISTRICT** 4

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES
Per Hour:

DIPPER,CLAMSHELL DREDGES & HYDRAULIC DREDGES	07/01/2007-09/30/2007	10/01/2007-09/30/2008	10/01/2008
CLASS A			
Operator, Leverman, Lead Dredgeman	$ 31.59	$ 32.09	$ 32.89
CLASS B			
Spider/Spill Barge Operator, Tug Operator(over1000hp), OperatorII, Fill Placer,	$ 27.49	$27.94	$ 28.49

Derrick Operator, Engineer, Chief Mate, Electrician, Chief Welder, Maintenance Engineer			
Certified Welder, Boat Operator(licensed)	$ 25.79	$ 26.29	$ 26.84
CLASS C			
Drag Barge Operator, Steward, Mate, Assistant Fill Placer,	$ 25.04	$ 25.49	$ 26.14
Welder (please add)	$ 0.51	$ 0.06	
Boat Operator	$ 24.29	$ 24.79	$ 25.29
CLASS D			
Shoreman, Deckhand, Rodman, Scowman, Cook, Messman, Porter/Janitor	$ 20.34	$ 20.64	$ 21.09
Oiler(please add)	$ 0.09		

SUPPLEMENTAL BENEFITS
Per Hour:

THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

	07/01/2007-09/30/2007	10/01/2007-09/30/2008	10/01/2008
All Classes A & B	$ 7.55 plus 7% of straight time wage	$ 7.80 plus 7% of straight time wage	$ 8.05 plus 7% of straight time wage
(overtime hours add)	$ 0.63	$ 0.63	$ 0.63
All Class C	$ 7.35 plus 7% of straight time wage	$ 7.50 plus 7% of straight time wage	$ 7.75 plus 7% of straight time wage
(overtime hours add)	$ 0.48	$ 0.48	$ 0.48
All Class D	$ 6.95 plus 7% of straight time wage	$ 7.20 plus 7% of straight time wage	$ 7.45 plus 7% of straight time wage
(overtime hours add)	$ 0.33	$ 0.23	$ 0.23

OVERTIME PAY
See (B, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 26) on HOLIDAY PAGE

4-25a-MarConst

Operating Engineer - Survey Crew — 07/01/2007

JOB DESCRIPTION Operating Engineer - Survey Crew **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Dutchess: : The Northern portion of the county from the Northern boundry line of the City of Poughkeepsie North.

WAGES
Per hour:

SURVEY CLASSIFICATIONS: Party Chief- One who directs a survey party. Instrumentman- One who runs the instrument and assists the Party Chief. Rodman- One who holds the rods and in general, assists the survey party.

	07/01/2007	06/01/2008
Survey Rates:		
Party Chief	$ 29.11	$ 29.82
Instrument/Rodperson	26.43	27.05

Additional 3.00 per hr. for work in a Tunnel.
Additional 2.50 per hr. for EPA or DEC certified toxic or hazardous waste work

SUPPLEMENTAL BENEFITS
Per hour worked:

Journeyman	$ 15.45	$ 16.30

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1 yr. or 1000 hrs.) terms at the following wage rates.

	1st	2nd	3rd
7/01/2007	15.86	18.51	21.15

Supplemental Benefits:
Per hour worked:

Apprentices	$ 15.45	16.30

6-545 D.H.H.

Operating Engineer - Survey Crew - Consulting Engineer — 07/01/2007

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Dutchess: the northern portion of the county from the northern boundry line of the City of Poughkeepsie north.

WAGES
Per hour:

Feasibility and preliminary design surveying, line and grade surveying for inspection or supervision of construction when performed under a consulting
ENGINEER AGREEMENT SURVEY CLASSIFICATIONS: Party Chief- One who directs a survey party. Instrumentman- One who runs the instrument and assists the Party Chief. Rodman- One who holds the rods and in general, assists the survey party.

	07/01/2007	06/01/2008
Survey Rates:		
Party Chief	$ 29.11	$ 29.82
Instrument/Rodperson	26.43	27.05

Additional 3.00 per hr. for work in a Tunnel.
Additional 2.50 per hr. for EPA or DEC certified toxic or hazardous waste work

SUPPLEMENTAL BENEFITS
Per hour worked:

	$ 15.45	$ 16.30

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

6-545 DCE

Operating Engineer - Trenchless Pipe Rehab — 07/01/2007

JOB DESCRIPTION Operating Engineer - Trenchless Pipe Rehab **DISTRICT** 4

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES
Per Hour:

	07/01/2007
DSET/DSSET Operator	$ 30.00
Robotic Unit Operator	30.00
DDCC Injection Operator	30.00
Technician/Equipment Operator	25.50
AM Liner/Hydra Seal Installer	25.50
Hobas Pipe, Polyethyene Pipe or Pull and Inflate Liner Inst.	25.50

SUPPLEMENTAL BENEFITS
Per Hour Worked

All Classifacations	$ 11.34

OVERTIME PAY
See (B, H) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 8, 9, 15, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
At One Year Terms
(Per Hour)

First Year	$ 16.00
Second Year	16.75
Third Year	17.25
Fourth Year	18.00

Supplemental Benifit
(Per Hour Worked)
All Terms $ 11.34

4-138TrchPReh

Painter — 07/01/2007

JOB DESCRIPTION Painter **DISTRICT** 1

ENTIRE COUNTIES
Columbia, Dutchess, Greene, Orange, Sullivan, Ulster

WAGES

Per hour

	07/01/2007
Brush/Paper Hanger	$ 24.59
Dry Wall Finisher	24.59
Lead Abatement	24.59
Sandblaster-Painter	24.59
Spray Rate	25.59

Bridge Painter:
See Bridge Painting rates for the following work.

Structural Steel, Tanks over 100,000 Gal or over 20' High, Towers, Smoke Stacks, Flag Poles, Bridges, Swing Stage, Boatswain Chair over 20', Bridge Sandblaster.

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman $ 13.69

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

One Half year terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th
40%	50%	60%	70%	80%	90%

Supplemental Benefits per hour worked

1st term	$ 6.19
All others	13.69

Painter - Heavy&Highway — 07/01/2007

JOB DESCRIPTION Painter - Heavy&Highway **DISTRICT** 9

ENTIRE COUNTIES
Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Ulster, Warren, Washington, Westchester

WAGES

(Per Hour Worked)	07/01/2007	10/01/2007	10/01/2008
STEEL:			
" Bridge Painting	$ 43.00	$ 44.00	$ 45.25
" ** Power Tool/Spray	$ 49.00	$ 50.00	$ 51.25

NB: For Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter's Rate; the contract must be ONLY for Bridge Painting.

SUPPLEMENTAL BENEFITS
(per hour paid)

Journeyman:	$ 26.23	$ 26.47

OVERTIME PAY
See (*A, **F, ***R) on OVERTIME PAGE
Note: When calculating overtime pay for the Power Tool/ Spray classification, add Six dollars to the hourly overtime rate calculated for the " bridge painting" classification.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE

Overtime: See (*4, **6) on HOLIDAY PAGE

REGISTERED APPRENTICES
(wage per hour Worked):

(1) year terms at the following percentage of Journeyman's wage.

Apprentices:	1st	2nd	3rd
07/01/2007	40%	60%	80%

Supplemental Benefits:
(1)year term at the following dollar amount:

Apprentices:	1st	2nd	3rd
07/01/2007	$ 21.47	$ 26.47	$ 26.47

9-DC-9/806-BrSS

Painter - Line Striping — 07/01/2007

JOB DESCRIPTION Painter - Line Striping **DISTRICT** 9

ENTIRE COUNTIES
Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES
Per hour:

Painter (Striping-Highway):	07/01/2007	06/01/2008
Striping-Machine Operator*	$ 24.71	$ 25.53
Linerman Thermoplastic	$ 29.79	$ 30.79

Note: *Includes Traffic Control

SUPPLEMENTAL BENEFITS

Per hour paid:	07/01/2007	06/01/2008
Journeyman:	$ 8.72 + 7% of wage	$ 9.97 + 7% of wage

OVERTIME PAY
See (B, E, P, S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 20) on HOLIDAY PAGE
Overtime: See (5, 8, 11, 12, 15, 16, 17, 20, 21, 22) on HOLIDAY PAGE

9-8A/28A-LS

Painter - Metal Polisher — 07/01/2007

JOB DESCRIPTION Painter - Metal Polisher **DISTRICT** 9

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

	07/01/2007
Metal Polisher	$ 23.10*

Note: *All workers shall be paid an additional premium in an amount equal to twenty (20%) percent of their basic straight time rate of pay for all time worked on hanging scaffolds and on standing scaffolds while working more than 34 feet off the ground. Such premium are to be paid on top of their straight time or overtime, whichever is applicable. This also applies to employees erecting scaffolding.

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2007
Journeyman:	$ 11.02

OVERTIME PAY
See (B, E, Q, T) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 9, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES
55% of Basic Polisher Rate (*)

9-8A/28A-MP

Plumber — 07/01/2007

JOB DESCRIPTION Plumber **DISTRICT** 8

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
Delaware: Only the Townships of Middletown and Roxbury.
Ulster: Entire county (including Wallkill and Shawangunk Prisons in Town of Shawangunk) EXCEPT for remainder of Town of Shawangunk, and Towns of Plattekill, Marlboro, and Wawarsing.

WAGES
(per hour)

	07/01/2007	05/01/2008
Plumber & Steamfitter	$ 38.51	Wage and Fringe Benefits will be an additional 5% to be allocated

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman: $ 22.15 per hour paid
+ 2.24 per hour worked

OVERTIME PAY
See (B, E*, Q, V) on OVERTIME PAGE.
* Note: Time & 1/2 for 1st. 8 on Sat.- all additional hours double time.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1)year terms at the following rates.

1st year.	$ 14.45
2nd year.	20.22
3rd year.	23.47
4th year.	28.40
5th year.	32.94

Supplemental Benefits per hour:
Apprentices

" 1st yr.	$ 9.75 per hour paid + 0.93 per hour worked
" 2nd yr.	12.27 per hour paid + 1.05 per hour worked
" 3rd yr.	14.16 per hour paid + 1.30 per hour worked
" 4th yr.	15.62 per hour paid + 1.93 per hour worked
" 5th yr.	17.11 per hour paid + 1.93 per hour worked

8-21.2-SF

Plumber - HVAC / Service — 07/01/2007

JOB DESCRIPTION Plumber - HVAC / Service **DISTRICT** 8

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
Delaware: Only the Townships of Middletown and Roxbury
Ulster: Entire county (including Wallkill and Shawangunk Prisons) except for remainder of Town of Shawangunk, and Towns of Plattekill, Marlboro, and Wawarsing.

WAGES
Per hour:

	07/01/2007
HVAC Service	$ 29.12

SUPPLEMENTAL BENEFITS
(per hour)

Journeyman	$ 13.57 per hour paid. + 0.55 per hour worked.

OVERTIME PAY
See (B, *E, Q, V) on OVERTIME PAGE
Note: Time and one half for the first eight hours on Saturday.
All additional hours on Saturday to be paid at double time.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1)year terms after 1st year at the following wages.

1st term	2nd term	3rd term	4th term	5th term
$ 13.23	$ 16.12	$ 19.02	$ 21.92	$ 24.80

Supplemental Benefits per hour:
Apprentices

1st term	$ 8.30 per hour paid + 0.35 per hour worked.
2nd term	9.27 per hour paid + 0.35 per hour worked.
3rd term	10.22 per hour paid + 0.40 per hour worked.
4th term	11.19 per hour paid + 0.45 per hour worked.
5th term	12.15 per hour paid + 0.45 per hour worked.

8-21.2-SF/Re/AC

Roofer **07/01/2007**

JOB DESCRIPTION Roofer **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Dutchess, Kings, New York, Orange, Putnam, Queens, Richmond, Rockland, Sullivan, Ulster, Westchester

WAGES
Per Hour:

	07/01/2007
Roofer/Waterproofer	$ 33.83

SUPPLEMENTAL BENEFITS

Journeyman	$ 23.97

OVERTIME PAY
See (B, H) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 13, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1) year terms at the following percentage of Journeyman's hourly wage.

1st	2nd	3rd	4th
35%	50%	60%	75%

Supplemental Benefits:
Per hour paid at the following term percentage of Journeyman's.

Apprentice:

1st	2nd	3rd	4th
35%	50%	60%	75%

9-8R

Sheetmetal Worker — 07/01/2007

JOB DESCRIPTION Sheetmetal Worker **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

WAGES

	07/01/2007
SheetMetal Worker	$ 36.58

SUPPLEMENTAL BENEFITS
Journeyman $ 25.91

OVERTIME PAY
OVERTIME:.. See (B, E, Q,) on OVERTIME PAGE.
*Note: For Sundays or Holidays worked, HOURLY WAGE is double the total of the hourly wage plus the hourly benefit paid all in wages. (Benefits are included in the wages).

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 13, 16, 23) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1/2) year terms at the following wages.

1st	2nd	3rd	4th	5th	6th	7th	8th
$13.37	$ 15.11	$ 16.82	$ 18.56	$ 21.78	$ 23.63	$ 25.47	$ 27.34

Supplemental Benefits per hour:

Apprentices	
1st term	$ 11.63
2nd term	13.01
3rd term	14.43
4th term	15.81
5th term	15.71
6th term	16.99
7th term	18.27
8th term	19.53

8-38

Sprinkler Fitter — 07/01/2007

JOB DESCRIPTION Sprinkler Fitter **DISTRICT** 1

ENTIRE COUNTIES

Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

WAGES
Per hour

	07/01/2007
Sprinkler Fitter	$ 37.65

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman	$ 15.40

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

One Half Year terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
50%	50%	55%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

1st & 2nd terms	$ 6.51
3rd & 4th terms	10.65
All others	15.40

1-669.2

Survey Crew Consulting — 07/01/2007

JOB DESCRIPTION Survey Crew Consulting **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES
Dutchess: Only the portion south of the north city line in Poughkeepsie.

WAGES
Feasibility and preliminary design surveying, line and grade surveying for inspection or supervision of construction when performed under a Consulting Engineer agreement.

WAGES: (per hour)

	07/01/2007
Survey Rates:	
Party Chief.....	$ 29.82
Instrument Man..	$ 25.01
Rodman.....	$ 21.95

SUPPLEMENTAL BENEFITS
(per hour paid)

Journeyman.....	$ 11.70

OVERTIME PAY
OVERTIME:.... See (B, E*, Q, V) ON OVERTIME PAGE.
*Doubletime paid on the 9th hour on Saturday.

HOLIDAY
Paid: See (5, 6, 7, 11, 16) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 11, 16) on HOLIDAY PAGE

9-15dconsult

Teamster - Building / Heavy&Highway — 07/01/2007

JOB DESCRIPTION Teamster - Building / Heavy&Highway **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Orange, Rockland, Sullivan, Ulster

WAGES
GROUP 1: LeTourneau Tractors, Double Barrel Euclids, Athney Wagons and similar equipment (except when hooked to scrapers), Low Beds, I-Beam and Pole Trailers, Tire Trucks and Tractor and Trailers with 5 axles and over, articulated back dumps and road oil distributors.

GROUP 1A: Drivers on detachable Gooseneck Low Bed Trailers rated over 35 tons.

GROUP 2: All equipment 25 yards and up to and including 30 yard bodies and cable Dump Trailers and Powder and Dynamite Trucks.

GROUP 3: All Equipment up to and including 24-yard bodies, Mixer Trucks, Dump Crete Trucks and similar types of equipment, Fuel Trucks and Batch Trucks and all other Tractor Trailers.

GROUP 4: Ten Wheelers, Grease Trucks and Tillerman.

GROUP 5: Straight Trucks.

GROUP 6: Pick-up Trucks for hauling materials, parts, and Escort Man over-the-road.

WAGES: (per hour)

	07/01/2007
GROUP 1	$ 28.25
GROUP 1A	29.25
GROUP 2	27.75
GROUP 3	27.55
GROUP 4	27.45
GROUP 5	27.35
GROUP 6	27.35

SUPPLEMENTAL BENEFITS
(per hour paid)

First 40 hours	$ 19.45
Over 40 hours	14.15

OVERTIME PAY
OVERTIME:... See (B, E, P,R*,T**) on OVERTIME PAGE.
Shift Work: A shift premium of 10% on wages will be paid for off-shift or irregular shift work when mandated by the NYS DOT or other governmental agency contracts.

HOLIDAY
HOLIDAY:
Paid:..... See (5, 6, 13, 15, 25) on HOLIDAY PAGE.
Overtime:.. See (5, 6, 13, 15, 25) on HOLIDAY PAGE.
NOTE: Holidays worked Monday to Friday receive straight time wage for working, plus Holiday Pay.
*Holidays worked on Saturday, code R applies.
**Holidays worked on Sunday, code T applies.

8-445B/HH

Welder **07/01/2007**

JOB DESCRIPTION Welder **DISTRICT** 1

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES
Per hour 07/01/2007

Welder (To be paid the same rate of the mechanic performing the work)

OVERTIME PAY

HOLIDAY

1-As Per Trade

Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

(A)	Time and one half of the hourly rate after 7 hours per day
(AA)	Time and one half of the hourly rate after 7 and one half hours per day
(B)	Time and one half of the hourly rate after 8 hours per day
(B1)	Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday. Double the hourly rate for all additional hours
(B2)	Time and one half of the hourly rate after 40 hours per week
(C)	Double the hourly rate after 7 hours per day
(C1)	Double the hourly rate after 7 and one half hours per day
(D)	Double the hourly rate after 8 hours per day
(D1)	Double the hourly rate after 9 hours per day
(E)	Time and one half of the hourly rate on Saturday
(E1)	Time and one half 1st 4 hours on Saturday Double the hourly rate all additional Saturday hours
(E3)	Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
(E2)	Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E4)	Saturday and Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(F)	Time and one half of the hourly rate on Saturday and Sunday
(G)	Time and one half of the hourly rate on Saturday and Holidays
(H)	Time and one half of the hourly rate on Saturday, Sunday, and Holidays
(I)	Time and one half of the hourly rate on Sunday
(J)	Time and one half of the hourly rate on Sunday and Holidays
(K)	Time and one half of the hourly rate on Holidays
(L)	Double the hourly rate on Saturday
(M)	Double the hourly rate on Saturday and Sunday
(N)	Double the hourly rate on Saturday and Holidays
(O)	Double the hourly rate on Saturday, Sunday, and Holidays
(P)	Double the hourly rate on Sunday
(Q)	Double the hourly rate on Sunday and Holidays
(R)	Double the hourly rate on Holidays
(S)	Two and one half times the hourly rate for Holidays, if worked
(S1)	Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.
(T)	Triple the hourly rate for Holidays, if worked

(U) Four times the hourly rate for Holidays, if worked

(V) Including benefits at SAME PREMIUM as shown for overtime

(W) Time and one half for benefits on all overtime hours.

NOTE:BENEFITS are PER HOUR WORKED,for each hour worked, unless otherwise noted

Holiday Codes

PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

(1)	None
(2)	Labor Day
(3)	Memorial Day and Labor Day
(4)	Memorial Day and July 4th
(5)	Memorial Day, July 4th, and Labor Day
(6)	New Year's, Thanksgiving, and Christmas
(7)	Lincoln's Birthday, Washington's Birthday, and Veterans Day
(8)	Good Friday
(9)	Lincoln's Birthday
(10)	Washington's Birthday
(11)	Columbus Day
(12)	Election Day
(13)	Presidential Election Day
(14)	1/2 Day on Presidential Election Day
(15)	Veterans Day
(16)	Day after Thanksgiving
(17)	July 4th
(18)	1/2 Day before Christmas
(19)	1/2 Day before New Years
(20)	Thanksgiving
(21)	New Year's Day
(22)	Christmas
(23)	Day before Christmas
(24)	Day before New Year's
(25)	Presidents' Day
(26)	Martin Luther King, Jr. Day

BUREAU OF PUBLIC WORK
STATE OFFICE BUILDING CAMPUS
ALBANY, NY 12240

REQUEST FOR WAGE AND SUPPLEMENT INFORMATION: REQUIRED BY ARTICLES 8 AND 9 OF THE LABOR LAW

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

THIS FORM MUST BE TYPED

SUBMITTED BY: (CHECK ONE) ☐ CONTRACTING AGENCY ☐ ARCHITECT OR ENGINEERING FIRM ☐ PUBLIC WORK DISTRICT OFFICE

DATE :

A. PUBLIC WORK CONTRACT TO BE LET BY: (Enter Data Pertaining to Contracting Agency)

1. Name and complete address (☐ check if new or change) :

Telephone: ( ) Fax: ( )
E-Mail:

2. NY State Units (see Item 5)

☐ 01 DOT
☐ 02 OGS
☐ 03 Dormitory Authority
☐ 04 State University Construction Fund
☐ 05 SUNY/Colleges
☐ 06 Mental Hygiene Facilities Corp.
☐ 07 OTHER N.Y. STATE UNIT
☐ 08 City
☐ 09 Local School District
☐ 10 Special Local District, i.e., Fire, Sewer, Water District
☐ 11 Village
☐ 12 Town
☐ 13 County
☐ 14 Other Non-N.Y. State (Describe)

3. SEND REPLY TO (☐ check if new or change)
Name and complete address:

Telephone: ( ) Fax:( )
E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

☐ New Schedule of Wages and Supplements.

APPROXIMATE BID DATE :

☐ Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR THIS PROJECT :

OFFICE USE ONLY

B. PROJECT PARTICULARS

5. Project Title _____

Description of Work _____

Contract Identification Number _____

Note: For NYS units, the OSC Contract No.

6. Location of Project:
Location on Site _____

Route No/Street Address _____

Village or City _____

Town _____

County _____

7. Nature of Project - Check One:

☐ 1. New Building
☐ 2. Addition to Existing Structure
☐ 3. Heavy and Highway Construction (New and Repair)
☐ 4. New Sewer or Waterline
☐ 5. Other New Construction (Explain)
☐ 6. Other Reconstruction, Maintenance, Repair or Alteration
☐ 7. Demolition
☐ 8. Building Service Contract

8. OCCUPATION FOR PROJECT :

☐ Construction (Building, Heavy Highway/Sewer/Water)
☐ Tunnel
☐ Residential
☐ Landscape Maintenance
☐ Elevator maintenance
☐ Exterminators, Fumigators
☐ Guards, Watchmen
☐ Janitors, Porters, Cleaners
☐ Moving furniture and equipment
☐ Trash and refuse removal
☐ Window cleaners
☐ Other (Describe)

9. Name and Title of Requester

Signature

OFFICE USE ONLY

Locality Designations :

SEE PAGE TWO FOR LAWS RELATING TO PUBLIC WORK CONTRACTS

DEPARTMENT OF LABOR - BUREAU OF PUBLIC WORK

Under Article 8 of the NYS Labor Law, when two final determinations have been rendered against a contractor, sub-contractor and/or its successor within any consecutive six-year period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements, or when one final determination involves falsification of payroll records or the kickback of wages and/or supplements, said contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work contract/sub-contract with the state, any municipal corporation or public body for a period of five years from the date of debarment.

NOTE: Where the Fiscal Officer is denoted "NYC", the information has been provided by the New York City Comptroller's Office, the agency issuing the determination.

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
385 Services LLC	2657 State Highway 28	Portlandville	NY	13834

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1466399	01/08/2009	DOL	Multiple willful violations

Company Name	Address	City	State	Zip Code
4-A General Construction Corp	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3161355	01/25/2012	AG	Plea Agreement with A.G.'s Office and Spiridon Anthoulis, Anastasia Anthoulis aka Stacey Gouzos as individuals

Company Name	Address	City	State	Zip Code
A & D Contracting Corp	15 Pine Aire Drive	Bay Shore	NY	11706

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3203983	08/01/2010	DOL	Falsification of payroll records. Also Tommaso Allocca as an individual

Company Name	Address	City	State	Zip Code
A A General Contractors Inc	1765 Mt Read Boulevard	Rochester	NY	14606

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1319254	10/18/2009	DOL	And W.J. Grinder Roofing as a substantially affiliated employer and Dominic Antonucci as an individual. Multiple willful violations

Company Name	Address	City	State	Zip Code
A Castricone Concrete Inc	P O Box 203	Athol Springs	NY	14010

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1582253	03/03/2008	DOL	and Crazy Horse Tonawanda Inc

Company Name	Address	City	State	Zip Code
A&T General Construction Inc	3 Alan B Shepard Place	Yonkers	NY	10705

FEIN:	Barred Until	Fiscal Officer	Notes:
13-3927478	12/11/2011	DOL	and Nick Nitis as an individual - falsification of payroll records

Company Name	Address	City	State	Zip Code
ACC Construction Corp	6 East 32nd St - 7th Fl	New York	NY	10016

FEIN:	Barred Until	Fiscal Officer	Notes:
11-2688758	05/25/2011	NYC	Falsified records

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Adam Deckman				

FEIN:	Barred Until	Fiscal Officer Notes:
		dba Deckman Painting

Company Name	Address	City	State	Zip Code
Aegean General Contracting Inc	57-16 157th Street	Flushing	NY	11355

FEIN:	Barred Until	Fiscal Officer Notes:
11-3451267	03/11/2008	Settlement agreement with A.G.'s Office - falsified payrolls - Also Aegean Marble Co., Aegean Marble Contracting Co., and George Begakis individually

Company Name	Address	City	State	Zip Code
Aegean Marble Co.				

FEIN:	Barred Until	Fiscal Officer Notes:
11-3451267	03/11/2008	See Aegean General Contracting Inc

Company Name	Address	City	State	Zip Code
Aegean Marble Contracting Co.				

FEIN:	Barred Until	Fiscal Officer Notes:
11-3451267	03/11/2008	See Aegean General Contracting Inc

Company Name	Address	City	State	Zip Code
Albany Pipe Insulators Inc	P O Box 332 - Foundry Rd	Voorheesville	NY	12186

FEIN:	Barred Until	Fiscal Officer Notes:
14-1617890	02/18/2008	DOL

Company Name	Address	City	State	Zip Code
American Weathertite Inc	P O Box 208	Clifton	NJ	07110

FEIN:	Barred Until	Fiscal Officer Notes:
65-0465918	03/28/2010	DOL

Company Name	Address	City	State	Zip Code
Amodio Russo	14 Brayron Road	Carmel	NY	10512

FEIN:	Barred Until	Fiscal Officer Notes:
	06/01/2010	As in individual and P&T Iron Works. Falsification of payroll records. Settlement Agreement with A.G.'s office

Company Name	Address	City	State	Zip Code
Anastasia Anthoulis	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer Notes:	
	01/25/2012	AG	aka Stacey Gouzos - as an individual - See 4-A General Construction Corp

Company Name	Address	City	State	Zip Code
Andres Alvarez	372 North Main Street	Lodi	NJ	07644

FEIN:	Barred Until	Fiscal Officer Notes:
	12/24/2009	See Corinthian Construction Co Inc

Company Name	Address	City	State	Zip Code
Angelo Zaffuto	162 Atlantic Avenue	Lynbrook	NY	11563

FEIN:	Barred Until	Fiscal Officer Notes:	
	09/29/2008	AG	As an individual. See Zaffuto Construction Company Inc

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
ANS Welding Corp	111 Dale Street	West Babylon	NY	11704

FEIN:	Barred Until	Fiscal Officer	Notes:
11-1867262	06/09/2009	DOL	Debarment period extended after additional willful violations

Company Name	Address	City	State	Zip Code
Anthos Contracting Corp	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
11-2967327	01/25/2012	AG	Plea Agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
Azam Ali Chaudhry				

FEIN:	Barred Until	Fiscal Officer	Notes:
	12/10/2007		See Republic Reconstruction & Management Inc

Company Name	Address	City	State	Zip Code
B & Z Development Inc	19 West Street	Spring Valley	NY	10977

FEIN:	Barred Until	Fiscal Officer	Notes:
13-3713559	02/22/2010	DOL	dba Ben-Zvy Enterprises Inc and Erez Ben-Zvy as an individual.

Company Name	Address	City	State	Zip Code
Bat-Jac Construction Inc	62 Neulist Avenue	Port Washington	NY	11050

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3391498	07/17/2009	DOL	aka Bat-Jac Contracting Inc. a/k/a Bat-Jac Inc. and Kenneth Merz, president and one of its five largest shareholders and Steve Menzer, vice president and one of its five largest shareholders, as individuals. Falsified payrolls.

Company Name	Address	City	State	Zip Code
Bat-Jac Contracting Inc				

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3133524	07/17/2009		See Bat-Jac Construction Inc

Company Name	Address	City	State	Zip Code
Bat-Jac Inc				

FEIN:	Barred Until	Fiscal Officer	Notes:
	07/17/2009		See Bat-Jac Construction aka Bat-Jac Contracting

Company Name	Address	City	State	Zip Code
Ben-Zvy Enterprises Inc	19 West Street	Spring Valley	NY	10977

FEIN:	Barred Until	Fiscal Officer	Notes:
13-3713559	02/22/2010		See B & Z Development Inc.

Company Name	Address	City	State	Zip Code
Best of Friends of Schenectady Constr Co	425 Hamilton Street	Schenectady	NY	12305

FEIN:	Barred Until	Fiscal Officer	Notes:
20-2105455	01/24/2011	DOL	

Company Name	Address	City	State	Zip Code
Boguslaw Bozek				

FEIN:	Barred Until	Fiscal Officer	Notes:
	05/14/2008		As an individual - see Goldhand Construction LLC

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
C B E Contracting Corp	310 McGuiness Blvd	Greenpoint	NY	11222

FEIN:	Barred Until	Fiscal Officer	Notes:
11-2968809	10/21/2007	DOL	And Muhammad A Beig as an individual. Falsified payrolls

Company Name	Address	City	State	Zip Code
C J H Inc				

FEIN:	Barred Until	Fiscal Officer	Notes:
14-1830289	06/10/2010		See N F K Excavating and Construction Inc

Company Name	Address	City	State	Zip Code
Cappry Contracting Management Corp	1081 Coney Island Avenue	Brooklyn	NY	11230

FEIN:	Barred Until	Fiscal Officer	Notes:
06-1174437	02/09/2011	NYC	Falsified payroll records

Company Name	Address	City	State	Zip Code
Carl Babb				

FEIN:	Barred Until	Fiscal Officer	Notes:
	07/21/2008		As an individual - See Olympic Window Installers Inc

Company Name	Address	City	State	Zip Code
Catenary Construction Corp	112 Hudson Avenue	Rochester	NY	14605

FEIN:	Barred Until	Fiscal Officer	Notes:
54-2129721	02/14/2011	DOL	Subsidiary of Lancet Arch Inc.

Company Name	Address	City	State	Zip Code
Causeway Construction Corp	110-30 15th Avenue	College Point	NY	11356

FEIN:	Barred Until	Fiscal Officer	Notes:
13-3065561	09/27/2007	NYC	Multiple willful violations

Company Name	Address	City	State	Zip Code
Cavalier Constr Corp c/o Clayman & Rosenbe	305 Madison Avenue	New York	NY	10165

FEIN:	Barred Until	Fiscal Officer	Notes:
	02/19/2008	NYC	Falsified records - plea agreement. Also Kingston Trucking & Rigging Corp., Manbru Construction Corp., Port Ewen Trucking Corp. and Super Structure Builders, Inc. as substantially owned-affiliated entities and/or successors of Cavalier.

Company Name	Address	City	State	Zip Code
Charles J Pardee	261 Ball Road	Hastings	NY	13076

FEIN:	Barred Until	Fiscal Officer	Notes:
	03/16/2009	DOL	As an individual. See Dalton Steel Inc.

Company Name	Address	City	State	Zip Code
Charles Marangoudakis	25 Woodhill Lane	Manhasset	NY	11030

FEIN:	Barred Until	Fiscal Officer	Notes:
	08/16/2010	DOL	Individually and Marangos Construction Corp and Tropic Construction Corp. Multiple willful violations

Company Name	Address	City	State	Zip Code
Christina J Hoek				

FEIN:	Barred Until	Fiscal Officer	Notes:
	06/10/2010		See N F K Excavating and Construction Inc

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Christopher Nicholson	91 Newman Place	Buffalo	NY	14210

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/19/2011		See Commercial System Construction

Company Name	Address	City	State	Zip Code
Columbus General Construction Inc	914 Newkirk Avenue	Brooklyn	NY	11230

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3357344	12/16/2009	AG	And Mohammed A Rashid as an individual. Falsified business records. Plea agreement.

Company Name	Address	City	State	Zip Code
Commercial Painting Co	4872 West Seneca Turnpike	Syracuse	NY	13215

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1513909	05/01/2008	DOL	James Stanton dba Commercial Painting Co - falsified payroll records

Company Name	Address	City	State	Zip Code
Commercial Steel Inc	65 Corporate Park Drive	Central Square	NY	13036

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1557064	03/16/2009	DOL	As a successor and/or substantially-owned affiliated entity with Dalton Steel Inc dba Pardee Construction - multiple willful violations

Company Name	Address	City	State	Zip Code
Commercial System Construction	91 Newman Place	Buffalo	NY	14210

FEIN:	Barred Until	Fiscal Officer	Notes:
90-0066866	10/19/2011	DOL	And Christopher Nicholson as an individual - falsification of payroll records

Company Name	Address	City	State	Zip Code
Commtech Communications Inc	649 Warwick Road	North Tonawanda	NY	14120

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1335983	11/22/2007	DOL	See also Commtech Electrical Construction Corp and Michael R Palmer - multiple violations

Company Name	Address	City	State	Zip Code
Commtech Electrical Construction	649 Warwick Road	North Tonawanda	NY	14120

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1407836	11/22/2007	DOL	See also Commtech Communications and Michael R Palmer- multiple violations

Company Name	Address	City	State	Zip Code
Corinthian Construction Co Inc	372 North Main Street	Lodi	NJ	07644

FEIN:	Barred Until	Fiscal Officer	Notes:
13-3750033	12/24/2009	AG	And Andres Alvarez as an individual. Plea agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
Crazy Horse Tonawanda Inc	P O Box 203	Athol Springs	NY	14010

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1528124	03/03/2008	DOL	and A Castricone Concrete Inc

Company Name	Address	City	State	Zip Code
Dalton Steel Inc	197 U S Route 11	Central Square	NY	13036

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1557064	03/12/2009	DOL	dba Pardee Construction and Shirley Pardee as an individual - multiple willful violations. Also Charles J Pardee as an individual.

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Darby General Contracting Inc	565 Oak Street	Copiague	NY	11726

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3420817	08/04/2008	DOL	dba Darby Glass Co - multiple willful violations

Company Name	Address	City	State	Zip Code
Darby Glass Co				

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3081390	08/04/2008		See Darby General Contracting Inc

Company Name	Address	City	State	Zip Code
Deckman Painting	154 Pond View Parkway	Rochester	NY	14612

FEIN:	Barred Until	Fiscal Officer	Notes:
75-3173012	04/16/2012	DOL	Adam Deckman dba Deckman Painting. Falsification of payroll records

Company Name	Address	City	State	Zip Code
Dellapenna Associates Inc	86 Olive Street	Johnson City	NY	13790

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1465989	02/18/2008	DOL	Substantially owned-affiliated entity and/or successor of Dellapenna Brothers Inc - debarment period extended after additional violations

Company Name	Address	City	State	Zip Code
Dellapenna Brothers Inc	86 Olive Street	Johnson City	NY	13790

FEIN:	Barred Until	Fiscal Officer	Notes:
16-0964223	08/04/2008	DOL	multiple willfuls - debarment period extended after additional violations

Company Name	Address	City	State	Zip Code
Dennis Lounsbury Builders Inc	P O Box 220	Bulville	NY	10915

FEIN:	Barred Until	Fiscal Officer	Notes:
14-1538702	05/27/2009	DOL	aka Lounsbury Erectors Inc.

Company Name	Address	City	State	Zip Code
DePoalo and Son Building Contractors Inc	296 Morris Road	Schenectady	NY	12303

FEIN:	Barred Until	Fiscal Officer	Notes:
14-1507523	07/12/2009	DOL	Multiple willful violations

Company Name	Address	City	State	Zip Code
DG Pipeline Inc	312 Halseyville Road	Ithaca	NY	14850

FEIN:	Barred Until	Fiscal Officer	Notes:
74-2917157	09/06/2011	DOL	and Douglas S Griffen, President and one of the five largest shareholders - falsified payrolls

Company Name	Address	City	State	Zip Code
Diamond "D" Construction Corp	5270 Transit Road	Depew	NY	14043

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1103218	12/14/2010	DOL	and Joseph DiPizio individually and as its president. Falsification of payroll records

Company Name	Address	City	State	Zip Code
Diracon Commercial Contractors	310 Maple Avenue	New Hampton	NY	10958

FEIN:	Barred Until	Fiscal Officer	Notes:
08-1681415	05/18/2009	DOL	and Rebecca Gatto-Wood as an individual. Falsified payrolls.

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
DJH Mechanical Associates Ltd	155 Kingsbridge Road East	Mount Vernon	NY	10552

FEIN:	Barred Until	Fiscal Officer	Notes:
13-3373364	02/01/2011	DOL	False records - plea agreement

Company Name	Address	City	State	Zip Code
Dominic Antonucci	1939 Town Line Road	Hilton	NY	14468

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/18/2009	DOL	As an individual. See A A General Contractors Inc and W J Grinder Roofing Company.

Company Name	Address	City	State	Zip Code
Don Adams Roofing Inc	472 Commerce Street	Hawthorne	NY	10532

FEIN:	Barred Until	Fiscal Officer	Notes:
13-3455881	12/07/2010	DOL	Plead guilty to a felony

Company Name	Address	City	State	Zip Code
Douglas S Griffen	312 Halseyville Road	Ithaca	NY	14850

FEIN:	Barred Until	Fiscal Officer	Notes:
	09/06/2011		See DG Pipeline Inc

Company Name	Address	City	State	Zip Code
Drywall Systems Unlimited Inc	182 West Main Street	Middletown	NY	10940

FEIN:	Barred Until	Fiscal Officer	Notes:
06-1405921	10/02/2007	DOL	

Company Name	Address	City	State	Zip Code
E Green Restoration & Roofing Inc	117 Hawley Street	Binghamton	NY	13901

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1561693	06/21/2009	DOL	

Company Name	Address	City	State	Zip Code
Eliyhu Benyamin	303 Ten Eyck Street	Brooklyn	NY	11206

FEIN:	Barred Until	Fiscal Officer	Notes:
	03/05/2010		As an individual. See W & B Mechanical Corp.

Company Name	Address	City	State	Zip Code
Elizabeth A. Carr	P O Box 82	Valatie	NY	12184

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/14/2008		dba Everlasting Slate - as an individual

Company Name	Address	City	State	Zip Code
Emeis & Emeis General Contracting Corp	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
13-4103233	01/25/2012	AG	Plea Agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
Emes Heating & Plumbing Contr	5 Emes Lane	Monsey	NY	10952

FEIN:	Barred Until	Fiscal Officer	Notes:
13-2590780		DOL	and Julius and Gita Behrend, as individuals. Parties entered into a voluntary agreement to be permanently debarred

Company Name	Address	City	State	Zip Code
Enjem's Incorporated	111 South Main Street	Herkimer	NY	13350

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1038008	03/04/2009	DOL	and Francis Enjem as an individual. Falsification of records.

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Enviroclean Services LLC	4245 Union Rd- Suite 210	Buffalo	NY	14225

FEIN:	Barred Until	Fiscal Officer	Notes:
26-0045677	09/07/2009	DOL	

Company Name	Address	City	State	Zip Code
Erez Ben-Zvy	19 West Street	Spring Valley	NY	10977

FEIN:	Barred Until	Fiscal Officer	Notes:
	02/22/2010		As an individual. See B & Z Development Inc

Company Name	Address	City	State	Zip Code
Euro Craft Restoration, Inc.	41-12 Ditmars Blvd	Long Island City	NY	11105

FEIN:	Barred Until	Fiscal Officer	Notes:
13-3769924	10/14/2008	DOL	and Savvas A. Savva (as an individual) Falsification of records and kickback of wages. Plea agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
Everlasting Slate	P O Box 82	Valatie	NY	12184

FEIN:	Barred Until	Fiscal Officer	Notes:
22-3397381	10/14/2008	DOL	And Elizabeth A. Carr and Sean Campion as individuals. Falsification of records

Company Name	Address	City	State	Zip Code
Florence XVI Century Marble Inc	120 Glen Head Road	Glen Head	NY	11545

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3262505	08/03/2010		Falsification of payroll records - plea agreement

Company Name	Address	City	State	Zip Code
Flower City Asbestos Inc	850 St Paul Street	Rochester	NY	14605

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1292474	08/18/2009	DOL	Multiple willful violations

Company Name	Address	City	State	Zip Code
Flower City Insulation Sales & Contractors	137 Yorkton Street	Webster	NY	14580

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1157832	08/03/2009	DOL	Multiple willful violations

Company Name	Address	City	State	Zip Code
Ford Construction Inc	18-18 26th Street	Astoria	NY	11102

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3167975	07/18/2010	DOL	and Mohammed Ali Alvi and Mohammed Ali Alvi T/A Ford Masonry - falsification of records

Company Name	Address	City	State	Zip Code
Ford Masonry	18-18 26th Street	Astoria	NY	11102

FEIN:	Barred Until	Fiscal Officer	Notes:
	07/18/2010	DOL	and Mohammed Ali Alvi individually and Ford Construction Inc. Falsification of payroll records

Company Name	Address	City	State	Zip Code
Foundation Construction Consultants Inc	294 20th Street	Brooklyn	NY	11215

FEIN:	Barred Until	Fiscal Officer	Notes:
11-2761496	05/20/2008	NYC	Multiple willfuls and falsification of payroll records

Company Name	Address	City	State	Zip Code
Francis Enjem	111 South Main Street	Herkimer	NY	13350

FEIN:	Barred Until	Fiscal Officer	Notes:
	03/04/2009		As an individual. See Enjem's Incorporated.

Company Name	Address	City	State	Zip Code
Franco Paints Inc	159 92nd Street	Brooklyn	NY	11209

FEIN:	Barred Until	Fiscal Officer	Notes:
	08/07/2008	NYC	and Mida Painting Ltd, Nicholas Kallergis and Stamatia Kallergis, as individuals. Assurance of Discontinuance/Settlement Agreement

Company Name	Address	City	State	Zip Code
Frank J Tucek & Son Inc	92 North Route 9W	Congers	NY	10920

FEIN:	Barred Until	Fiscal Officer	Notes:
13-3300128	01/29/2012	DOL	

Company Name	Address	City	State	Zip Code
Frank Lobene Jr	13 Cheviot Lane	Rochester	NY	14624

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/18/2010		As an individual - See Lobene Painting Inc.

Company Name	Address	City	State	Zip Code
George Begakis				

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/04/2011		As an individual - see Aegean General Contracting Inc - Debarment period has been extended for George Begakis as per A.G.'s Plea Agreement

Company Name	Address	City	State	Zip Code
George Bush	19 Hoffman Drive	Latham	NY	12118

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/14/2009	DOL	Falsification of payroll records

Company Name	Address	City	State	Zip Code
George J Leva Sr.				

FEIN:	Barred Until	Fiscal Officer	Notes:
	02/06/2008		As an individual dba Ontario Flooring Company. Debarment period extended after additional violation

Company Name	Address	City	State	Zip Code
George Lucey,Manual Tobio(see note)	150 Kings Street	Brooklyn	NY	11231

FEIN:	Barred Until	Fiscal Officer	Notes:
		NYC	Manuel P Tobio and Lake Constr and Development Corp (individually and as a whole) grand larceny, falsified records, debarred permanently

Company Name	Address	City	State	Zip Code
Gerasimo Andrianis	22-15 47th Street	Astoria	NY	11105

FEIN:	Barred Until	Fiscal Officer	Notes:
	08/03/2011	AG	As an individual. See Rainbow Renovations Inc

Company Name	Address	City	State	Zip Code
Goldhand Construction LLC	116 East Saddle River Rd	Saddle River	NJ	07458

FEIN:	Barred Until	Fiscal Officer	Notes:
22-3765123	05/14/2008	DOL	Falsified payroll records

Company Name	Address	City	State	Zip Code
Gregory Kloepfer	248 Lein Road	West Seneca	NY	14224

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/06/2009	DOL	As an individual. See Kloepfer's Floor Coverning

Company Name	Address	City	State	Zip Code
Haleem Zihenni	3 Alan B Shepard Place	Yonkers	NY	10705

FEIN:	Barred Until	Fiscal Officer	Notes:
	12/11/2011	DOL	As an individual see Omni Contracting Company Inc

Company Name	Address	City	State	Zip Code
Hamax Construction Corporation	540 Commerce St - Ste 6	Thornwood	NY	10594

FEIN:	Barred Until	Fiscal Officer	Notes:
06-1482076	09/11/2008	DOL	Also Thomas Hanlon and William Valentine as individuals. Multiple willfuls and falsification of records. Debarment period extended after other willful violations

Company Name	Address	City	State	Zip Code
Harrison Jarvis	132 W 129th St-Ste 4W	New York	NY	10027

FEIN:	Barred Until	Fiscal Officer	Notes:
	08/12/2009	AG	As an individual and Two By Four Carpentry and Construction Inc. Plea agreement with A.G.'s Office.

Company Name	Address	City	State	Zip Code
HDA Construction	942 Havemeyer Avenue	Bronx	NY	10473

FEIN:	Barred Until	Fiscal Officer	Notes:
06-1613022	12/10/2007	DOL	Falsified records

Company Name	Address	City	State	Zip Code
Hi Tech Insulation	P O Box 12861	Rochester	NY	14612

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1487213	12/09/2007	DOL	Kevin C. Marlowe dba Hi Tech Insulation - multiple violations

Company Name	Address	City	State	Zip Code
Howard K Enterprise Inc	219-02 Northern Boulevard	Flushing	NY	11361

FEIN:	Barred Until	Fiscal Officer	Notes:
22-3791841	04/14/2010	AG	and Howard Kim a/k/a un Hak Kim as an individual - Plea agreement. Additional addresses: 703 Atlantic Avenue, Rochester, NY 14609 and 121 Hemingway Drive, Rochester, NY 14620

Company Name	Address	City	State	Zip Code
Howard Kim	75 West Edsall Boulevard	Palisades Park	NJ	

FEIN:	Barred Until	Fiscal Officer	Notes:
	04/14/2010	AG	a/k/a un Hak Kim, as an individual. See Howard K Enterprise Inc

Company Name	Address	City	State	Zip Code
I C Construction Company Inc	120 South Broadway	Red Hook	NY	12571

FEIN:	Barred Until	Fiscal Officer	Notes:
14-1789216	08/21/2007	DOL	Multiple willfuls - Debarment period extended after additional violations

Company Name	Address	City	State	Zip Code
IES Environmental Inc	1655 Elmwood Avenue	Cranston	RI	02910

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/05/2009	DOL	And International Environmental Services Inc and James J Ney Jr as an individual. Falsification of payroll records

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Integrity Construction & Consulting Servs	7615 Myrtle Avenue	Glendale	NY	11385

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3147728	02/15/2012	NYC	Falsification of payroll records

Company Name	Address	City	State	Zip Code
Interior Decorating Floor Covering Co Inc	2229 Clifford Avenue	Rochester	NY	14609

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1337838	07/29/2007	DOL	Falsification of records

Company Name	Address	City	State	Zip Code
International Environmental Resources				

FEIN:	Barred Until	Fiscal Officer	Notes:
05-0448266	08/09/2007		See International Environmental Services Inc

Company Name	Address	City	State	Zip Code
International Environmental Services Inc	2 Stafford Court	Cranston	RI	02920

FEIN:	Barred Until	Fiscal Officer	Notes:
05-0448266	10/05/2009	DOL	dba International Environmental Resources - Falsified payrolls - Debarment period extended after additional violation. Also IES Environmental Inc and James J Ney Jr as an individual

Company Name	Address	City	State	Zip Code
Ismael Cisneros				

FEIN:	Barred Until	Fiscal Officer	Notes:
	04/14/2008		As an individual - See Izi Plumbing & Heating Ltd

Company Name	Address	City	State	Zip Code
Izi Plumbing & Heating Ltd	291 Metropolitan Avenue	Brooklyn	NY	11211

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3157717	04/14/2008	DOL	and Ismael Cisneros, Individually - falsified payrolls

Company Name	Address	City	State	Zip Code
J B C Contracting Co Inc	346 Prospect Ave - 1st Fl	Brooklyn	NY	11215

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3550663	03/23/2010	AG	And/or 509 McDonald Avenue, Brooklyn NY 11218. And Mohammed H Kabir as an individual and J B C Contracting Company. Settlement agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
J B C Contracting Company	346 Prospect Ave - 1st Fl	Brooklyn	NY	11215

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3330280	03/23/2010	AG	And/or 509 McDonald Avenue, Brooklyn NY 11218. And Mohammed H Kabir as an individual and JBC Contracting Co Inc. Settlement Agreement with A.G's Office

Company Name	Address	City	State	Zip Code
J Barr Construction Corp	119-51 Metropolitan Ave	Jamaica	NY	11415

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3344003	12/14/2009	DOL	and Steve J Nictas as an individual. Multiple willful violations

Company Name	Address	City	State	Zip Code
J C McCashion Construction Inc	84 Fredericks Avenue	Albany	NY	12205

FEIN:	Barred Until	Fiscal Officer	Notes:
14-1767357	04/13/2011	DOL	Multiple willful violations

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
J T Painting Corp	P O Box 337	Burlingham	NY	12722

FEIN:	Barred Until	Fiscal Officer	Notes:
06-1260246	02/26/2009	DOL	Falsification of records

Company Name	Address	City	State	Zip Code
James Avallone				

FEIN:	Barred Until	Fiscal Officer	Notes:
	08/07/2008		As an individual - see James Avallone Tile & Marble - debarment period extended

Company Name	Address	City	State	Zip Code
James Avallone Tile & Marble	217 Christie Street	Ridgefield Park	NJ	07660

FEIN:	Barred Until	Fiscal Officer	Notes:
07-5336752	08/07/2008	DOL	Multiple willful violations - debarment period extended

Company Name	Address	City	State	Zip Code
James J Ney Jr	1655 Elmwood Avenue	Cranston	RI	02910

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/05/2009	DOL	As an individual. See International Environmental Services Inc and IES Environmental Inc

Company Name	Address	City	State	Zip Code
Jans General Construction Corp	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
13-4201562	01/25/2012	AG	Plea Agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
Jay Meyer	239 Marsh Drive	DeWitt	NY	13214

FEIN:	Barred Until	Fiscal Officer	Notes:
	02/20/2012		As an individual - see Sky Communications, Inc

Company Name	Address	City	State	Zip Code
JBC Industries of Parish Inc	P O Box 728 - CR 44	Mexico	NY	13114

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1470149	07/24/2007	DOL	Multiple willful violations

Company Name	Address	City	State	Zip Code
John Bradford	6614 Furnace Road	Ontario	NY	14519

FEIN:	Barred Until	Fiscal Officer	Notes:
	12/22/2009		As an individual. See Rusmar Environmental Services Corp.

Company Name	Address	City	State	Zip Code
Joseph DiPizio	5270 Transit Road	Depew	NY	14043

FEIN:	Barred Until	Fiscal Officer	Notes:
	12/14/2010		As an individual. See Diamond "D" Construction Corp

Company Name	Address	City	State	Zip Code
Joseph Zaffuto	162 Atlantic Avenue	Lynbrook	NY	11563

FEIN:	Barred Until	Fiscal Officer	Notes:
	09/29/2008	AG	As an individual. See Zaffuto Construction Company Inc

Company Name	Address	City	State	Zip Code
JRC Aris Electric Contractors				

FEIN:	Barred Until	Fiscal Officer	Notes:
	09/13/2009		See JRC Electric Control Service Inc

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
JRC Electric Control Service Inc	516 East 51st Street	Brooklyn	NY	11236

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3199418	09/13/2009	NYC	a/k/a JRC Aris Electric Contractors - multiple willfufl violations

Company Name	Address	City	State	Zip Code
Julius and Gita Behrend	5 Emes Lane	Monsey	NY	10952

FEIN:	Barred Until	Fiscal Officer	Notes:
			See Emes Heating & Plumbing Contractor, Inc

Company Name	Address	City	State	Zip Code
K M R Enterprises Inc	10 Stuffle Street	Cropseyville	NY	12052

FEIN:	Barred Until	Fiscal Officer	Notes:
14-1749993	05/03/2010	DOL	Multiple willful violations.

Company Name	Address	City	State	Zip Code
Kefcal Construction Inc	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/25/2012	AG	Plea Agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
Kenneth Merz	62 Neulist Avenue	Port Washington	NY	11050

FEIN:	Barred Until	Fiscal Officer	Notes:
	07/17/2009		As an individual. See Bat-Jac Construction

Company Name	Address	City	State	Zip Code
Kenneth W Griffin	101 Lill Street	Rochester	NY	14621

FEIN:	Barred Until	Fiscal Officer	Notes:
	05/01/2011		As an individual - see Lightning Fast Labor Force Services Inc

Company Name	Address	City	State	Zip Code
Kevin C Marlowe				

FEIN:	Barred Until	Fiscal Officer	Notes:
	12/09/2007		See Hi Tech Insulation

Company Name	Address	City	State	Zip Code
Keystone Construction Corp	9945 Fort Hamilton Pkwy	Brooklyn	NY	11209

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1402500	08/20/2008	DOL	And Nicholas Margaritis as an individual

Company Name	Address	City	State	Zip Code
King Machine	11365 Center Road	Sheridan	NY	14135

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1293494	04/04/2010	DOL	See Robert Metzgar

Company Name	Address	City	State	Zip Code
Kingston Trucking & Rigging Corp	99 St Nicholas Avenue	Brooklyn	NY	11237

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3540715	02/19/2008	DOL	As a substantially owned-affiliated entity and/or successor of Cavalier Construction Corp. Falsification of records

Company Name	Address	City	State	Zip Code
Kloepfer's Floor Covering	248 Lein Road	West Seneca	NY	14224

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1234359	10/06/2009	DOL	And Gregory Kloepfer as an individual. Multiple willful violations

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Kosmar Contracting Corp	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
13-4103318	01/25/2012	AG	Plea Agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
K-Star Construction Corp	42 48 161st Street	Flushing	NY	11358

FEIN:	Barred Until	Fiscal Officer	Notes:
01-0778648	12/11/2011	DOL	Multiple willful violations

Company Name	Address	City	State	Zip Code
L & T Plumbing Corp	367 Veterans Memorial Hwy	Commack	NY	11725

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3223496	01/11/2010	DOL	And Robert DeMonte as an individual.

Company Name	Address	City	State	Zip Code
Labar Enterprises of Rochester Inc	2121 Empire Boulevard	Webster	NY	14580

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1605462	04/18/2010	DOL	dba Labar Excavating Inc. Multiple willful violations

Company Name	Address	City	State	Zip Code
Labar Excavating Inc				

FEIN:	Barred Until	Fiscal Officer	Notes:
	04/18/2010		See Labar Enterprises of Rochester Inc.

Company Name	Address	City	State	Zip Code
Lake Construction and Development Corp				

FEIN:	Barred Until	Fiscal Officer	Notes:
11-2678816			See George Lucey -debarred permanently

Company Name	Address	City	State	Zip Code
Lancet Arch Inc	112 Hudson Avenue	Rochester	NY	14605

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1259628	02/14/2011	DOL	Multiple willful violations - and its subsidiary Catenary Construction Corp

Company Name	Address	City	State	Zip Code
Liberty Painting Company Inc	183 Lorfield Drive	Snyder	NY	14226

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1480256	12/08/2010	DOL	Miltiple willful violations

Company Name	Address	City	State	Zip Code
Lightning Fast Labor Force Services Inc	150 North Chestnut Street	Rochester	NY	14604

FEIN:	Barred Until	Fiscal Officer	Notes:
20-0386651	05/01/2011	DOL	And Winston J Goins Sr. and Kenneth W Griffin individually. Falsification of records

Company Name	Address	City	State	Zip Code
Linda Williams c/o MJAB Construction Inc	183 Washington Avenue	New Rochelle	NY	10801

FEIN:	Barred Until	Fiscal Officer	Notes:
	04/22/2009	DOL	As an individual. See MJAB Construction Inc

Company Name	Address	City	State	Zip Code
Lobene Painting Inc	13 Cheviot Lane	Rochester	NY	14624

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1514981	10/18/2010	DOL	And Frank Lobene Jr and Matthew Lobene as individuals - falsification of payroll records

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Look Under the Carpet Services Inc	P O Box 686	Buffalo	NY	14290

FEIN:	Barred Until	Fiscal Officer	Notes:
01-0664654	12/15/2010	A.G	Plea Agreement with A.G.'s Office - principal place of business: 1557 Jefferson Avenue, Buffalo, NY 14208

Company Name	Address	City	State	Zip Code
Lorenzo DeVardo	1850 Steinway Street	Long Island City	NY	11105

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/08/2009	DOL	As an individual. See Vardo Construction Corp

Company Name	Address	City	State	Zip Code
Lounsbury Erectors Inc				

FEIN:	Barred Until	Fiscal Officer	Notes:
	05/27/2009		See Dennis Lounsbury Builders Inc

Company Name	Address	City	State	Zip Code
LTS Construction	24 Miller Street	Rochester	NY	

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1463105	06/30/2009		See Thomas L. Smalls

Company Name	Address	City	State	Zip Code
M & S Pipeline Excavation Company Inc	784 Conklin Road	Binghamton	NY	13903

FEIN:	Barred Until	Fiscal Officer	Notes:
16-0926714	05/06/2009	DOL	Multiple willful violations

Company Name	Address	City	State	Zip Code
Manbru Construction Corp	1439 Wood Road	Bronx	NY	10462

FEIN:	Barred Until	Fiscal Officer	Notes:
	02/19/2008	DOL	Also at 201-203 E 22nd Street, New York 10010. As a substantially owned-affiliated entity and/or successor of Cavalier Construction Corp. Falsification of records.

Company Name	Address	City	State	Zip Code
Manns Contracting Corp	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/25/2012	AG	Plea Agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
Manuel P. Tobio				

FEIN:	Barred Until	Fiscal Officer	Notes:
			See George Lucey - debarred permanently

Company Name	Address	City	State	Zip Code
Manuel Tobio				

FEIN:	Barred Until	Fiscal Officer	Notes:
			See George Lucey - debarred permanently

Company Name	Address	City	State	Zip Code
Marangos Construction Corp	59-45 56th Avenue	Maspeth	NY	11378

FEIN:	Barred Until	Fiscal Officer	Notes:
11-2554543	08/16/2010	DOL	And Charles Marangoudakis individually and Tropic Construction Corp. Multiple willful violations.

Company Name	Address	City	State	Zip Code
Mary Newsom	1537 Union Street	Schenectady	NY	12309

FEIN:	Barred Until	Fiscal Officer	Notes:
	05/24/2009	DOL	As an individual. See Pachyderm Enterprises, Inc

Company Name	Address	City	State	Zip Code
Mas-Ann Mechanical Inc	35 Regency Oaks Blvd	Rochester	NY	14624

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1357694	01/04/2010	DOL	Debarment period extended after additional willful violations

Company Name	Address	City	State	Zip Code
Masciarelli Construction Co	784 Conklin Road	Binghamton	NY	13903

FEIN:	Barred Until	Fiscal Officer	Notes:
16-0902053	05/06/2009	DOL	Multiple willful violations

Company Name	Address	City	State	Zip Code
Matthew Lobene	13 Cheviot Lane	Rochester	NY	14624

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/18/2010		As an individual - See Lobene Painting Inc

Company Name	Address	City	State	Zip Code
MCS Painting Contractors Inc	Lime Kiln Court	Stony Point	NY	10980

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/25/2011	DOL	False records - also Michael Salerno as its President

Company Name	Address	City	State	Zip Code
Merchants I & S Corp Inc	7732 Victor Mendon Road	Victor	NY	14564

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1405450	11/22/2007	DOL	Debarment extended after additional violation

Company Name	Address	City	State	Zip Code
Merit Fence Co Inc	130 Old Route 6	Carmel	NY	10512

FEIN:	Barred Until	Fiscal Officer	Notes:
06-1350241	02/02/2012	DOL	Multiple willful violations - debarment period extended after other willful violations

Company Name	Address	City	State	Zip Code
MGC Restoration Services Inc	64-58 218th Street	Bayside	NY	11364

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3031515	01/01/2010	AG	And Michael Capous individually. Plea agreement

Company Name	Address	City	State	Zip Code
Michael Capous	64-58 218th Street	Bayside	NY	11364

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/01/2010	AG	As an individual. Se MGC Restoration Services Inc.

Company Name	Address	City	State	Zip Code
Michael R Palmer				

FEIN:	Barred Until	Fiscal Officer	Notes:
	11/22/2007		As an individual - See Commtech Communications Inc and Commtech Electrical Construction Corp

Company Name	Address	City	State	Zip Code
Michael Salerno	Lime Kiln Court	Stony Point	NY	10980

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/25/2009	DOL	Individually as president of MCS Painting Contractors - false records

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Michael Taylor	66 Rybka Road	Stuyvesant Falls	NY	12174

FEIN:	Barred Until	Fiscal Officer	Notes:
	03/02/2012	DOL	As an individual - see Supreme Sports Surfaces Inc., R & T Supreme Sports Flooring, LLC, and Northeastern Supreme Floor Co., Inc.

Company Name	Address	City	State	Zip Code
Mida Painting Ltd	159 92nd Street	Brooklyn	NY	11209

FEIN:	Barred Until	Fiscal Officer	Notes:
	08/07/2008	NYC	and Franco Paints, Inc. and Nicholas Kallergis and Stamatia Kallergis, as individuals. Assurance of Discontinuance/Settlement Agreement

Company Name	Address	City	State	Zip Code
MJAB Construction Inc	183 Washington Avenue	New Rochelle	NY	10801

FEIN:	Barred Until	Fiscal Officer	Notes:
58-2620937	04/22/2009	DOL	and Linda Williams as an individual. Falsification of payroll records

Company Name	Address	City	State	Zip Code
Modern Tech Design & Services Inc	9151 Southwestern Blvd	Angola	NY	14006

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1464435	01/19/2011	DOL	Multiple willful violations

Company Name	Address	City	State	Zip Code
Mohammed A Rashid	914 Newkirk Avenue	Brooklyn	NY	11230

FEIN:	Barred Until	Fiscal Officer	Notes:
	12/16/2009		As an individual. See Columbus General Construction Inc

Company Name	Address	City	State	Zip Code
Mohammed Ali Alvi	22-41 26th Street - Apt 2	Astoria	NY	11102

FEIN:	Barred Until	Fiscal Officer	Notes:
	07/18/2010	DOL	Individually and Mohammed Ali Alvi T/A Ford Masonry and Ford Construction Inc. Falsification of payroll records

Company Name	Address	City	State	Zip Code
Mohammed H Kabir	200 East 77th Street	Brooklyn	NY	11218

FEIN:	Barred Until	Fiscal Officer	Notes:
	03/23/2010	AG	As an individual. See J B C Contracting Co Inc and J B C Contracting Company - Settlement Agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
Muhammad A Beig	142 East Market Street	Long Beach	NY	11561

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/21/2007	DOL	As an individual - See C B E Contracting Corporation. falsified payrolls

Company Name	Address	City	State	Zip Code
Muir Contractors Associates Inc	75 Argyle Ave - Suite 2B	Uniondale	NY	11553

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3586616	08/18/2010	DOL	Falsification of payroll records

Company Name	Address	City	State	Zip Code
Musa Pacuku				

FEIN:	Barred Until	Fiscal Officer	Notes:
	04/14/2008		As an individual - See Victory Roofing & Contracting Co Inc

Company Name	Address	City	State	Zip Code
N F K Enterprises				

FEIN:	Barred Until	Fiscal Officer	Notes:
	06/10/2010		See N F K Excavating and Construction Inc

Company Name	Address	City	State	Zip Code
N F K Excavating and Construction Inc	22 Black Hawk Road	Pine Bush	NY	12566

FEIN:	Barred Until	Fiscal Officer	Notes:
14-1803310	06/10/2010	DOL	and N F K Landscaping Supply Corp and N F K Enterprises Inc and CJH Inc and Roger A Hoek Jr and Christina J Hoek as individuals. Falsification of payroll records

Company Name	Address	City	State	Zip Code
N F K Landscaping Supply Corp				

FEIN:	Barred Until	Fiscal Officer	Notes:
14-1817371	06/10/2010		See N F K Excavating and Construction Inc

Company Name	Address	City	State	Zip Code
Neuss Construction Inc	1191 Route 9W - Suite #C6	Marlboro	NY	12542

FEIN:	Barred Until	Fiscal Officer	Notes:
14-1782213	09/06/2011	DOL	And Rudolph Neuss as an individual, as chief executive and one of the five largest shareholders of Neuss Construction Inc- falsification of payroll records

Company Name	Address	City	State	Zip Code
Nicholas Kallergis	159 92nd Street	Brooklyn	NY	11209

FEIN:	Barred Until	Fiscal Officer	Notes:
	08/07/2008		As an individual. See Franco Paints, Inc.and Mida Painting Ltd

Company Name	Address	City	State	Zip Code
Nicholas Margaritis				

FEIN:	Barred Until	Fiscal Officer	Notes:
	08/20/2008		See Keystone Construction Corp.

Company Name	Address	City	State	Zip Code
Nick Nitis	3 Alan B Shepard Place	Yonkers	NY	10705

FEIN:	Barred Until	Fiscal Officer	Notes:
	12/11/2011	DOL	As an individual - see A&T Construction

Company Name	Address	City	State	Zip Code
Northeastern Supreme Floor Co Inc	66 Benedict Street	Castleton	NY	12033

FEIN:	Barred Until	Fiscal Officer	Notes:
14-1781833	03/02/2012	DOL	And Michael Taylor individually, Supreme Sport Surfaces Inc and R & T Supreme Sports Flooring LLC - multiple willful violations and falsification of payroll records

Company Name	Address	City	State	Zip Code
Nu-Look Painting & Wallpapering Inc	151-60 7th Avenue	Whitestone	NY	11357

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3389457	08/04/2009	AG	and TF Painting Corp. and Tarcisio Ferreira, individually. Plea agreement with the A.G.'s Office.

Company Name	Address	City	State	Zip Code
Olympia Mechanical Piping & Heating Inc	3624 12th Avenue	Brooklyn	NY	11218

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3161641	08/18/2010	AG	And Steven Tischler and Solomon Werzberger as individuals. Plea Agreement with District Attorney

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Olympic Window Installers Inc	174 Lincoln Avenue	Hawthorne	NJ	07506

FEIN:	Barred Until	Fiscal Officer	Notes:
22-3034903	07/21/2008	DOL	and Carl and Russell Babb as individuals

Company Name	Address	City	State	Zip Code
Omni Contracting Company Inc	3 Alan B Shepard Place	Yonkers	NY	10705

FEIN:	Barred Until	Fiscal Officer	Notes:
22-3431803	12/11/2011	DOL	And Haleem Zihenni as an individual - falsification of payroll records

Company Name	Address	City	State	Zip Code
Ontario Flooring Company	296 Rogers Parkway	Rochester	NY	14617

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1554554	02/06/2008	DOL	See George J Leva Sr. Debarment period extended after additional violation

Company Name	Address	City	State	Zip Code
Oswego Trucking & Leasing	258 Washington Blvd	Oswego	NY	13126

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1371814	07/21/2008	DOL	Falsified records

Company Name	Address	City	State	Zip Code
P & H Supply Company Inc	241-A Harrison Avenue	Harrison	NY	10528

FEIN:	Barred Until	Fiscal Officer	Notes:
13-3868727	05/25/2009	DOL	Multiple willful violations - debarment period extended after additional willful violations

Company Name	Address	City	State	Zip Code
P&T Iron Works	59 Plain Avenue	New Rochelle	NY	10801

FEIN:	Barred Until	Fiscal Officer	Notes:
13-3895133	06/01/2010		and Amodio Russo individually. Falsification of payroll records. Settlement Agreement with A.G.'s office

Company Name	Address	City	State	Zip Code
Pachyderm Enterprises Inc	1537 Union Street	Schenectady	NY	12309

FEIN:	Barred Until	Fiscal Officer	Notes:
00-1386527	05/24/2009	DOL	And Willie Jones and Mary Newsom as individuals - Multiple willful violations

Company Name	Address	City	State	Zip Code
Paragon Plate Glass Inc	210 Factory Street	Watertown	NY	13601

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1113039	11/07/2011	DOL	And Thomas E Mooney individually as President of Paragon Plate Glass Inc - falsified payrolls

Company Name	Address	City	State	Zip Code
Pardee Construction				

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1557064	03/12/2009		See Dalton Steel Inc.

Company Name	Address	City	State	Zip Code
Paul M Maintenance Inc	7 Gatewood Drive	Hauppauge	NY	11788

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3287638	07/02/2007	DOL	Falsified payrolls

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Perry Jacobs	736 Sherman Dr-Box 8015	Utica	NY	13505

FEIN:	Barred Until	Fiscal Officer	Notes:
	12/04/2010		As an individual. See Precision Site Work Inc. - debarment period extended

Company Name	Address	City	State	Zip Code
Peter Gouzos	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/25/2012	AG	As an individual. See SNA Contracting Corp. Plea agreement with A.G.'s Office. Falsified records.

Company Name	Address	City	State	Zip Code
Pettit & Pettit Inc	7 Schuyler Street	Belmont	NY	14813

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1576164	03/21/2010	DOL	Multiple villful violations

Company Name	Address	City	State	Zip Code
Port Ewen Trucking Corp	2013 Flatbush Avenue	Brooklyn	NY	11234

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3484639	02/19/2008	DOL	Also at 99 St. Nicholas Avenue, Brooklyn, NY 11237. As a a substantially owned-affiliated entity and/or successor of Cavalier Construction Corp. Falsification of records

Company Name	Address	City	State	Zip Code
Precision Site Work Inc	736 Sherman Dr - Box 8015	Utica	NY	13505

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1609167	12/04/2010	DOL	And its president, Perry Jacobs, as an individual. Falsification of payroll records - debarment period extended

Company Name	Address	City	State	Zip Code
R & T Supreme Sports Flooring LLC	66 Rybka Road	Stuyvesant Falls	NY	12174

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1511596	03/02/2012	DOL	And Michael Taylor individually, Supreme Sport Surfaces and Northeastern Supreme Floor Co. Inc - multiple willful violations and falsified payroll records

Company Name	Address	City	State	Zip Code
R S Construction Company LLC	571 Miles Square Road	Yonkers	NY	10701

FEIN:	Barred Until	Fiscal Officer	Notes:
00-2051629	04/04/2012	DOL	And Robert Stevenson, individually. Falsification of payroll records

Company Name	Address	City	State	Zip Code
Rainbow Renovations Inc	35-44 Crescent Street	Long Island City	NY	11106

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3542626	08/03/2011	AG	Additional addresses: 22-15 47th Street, Astoria, NY 11105 and 35-34 31st Street, Long Island City, NY 11106. Gerasimo Andrianis debarred as an individual.

Company Name	Address	City	State	Zip Code
Rapid Demolition Co Inc	2550 West 13th Street	Brooklyn	NY	11223

FEIN:	Barred Until	Fiscal Officer	Notes:
11-2869485	11/18/2007	NYC	And successors

Company Name	Address	City	State	Zip Code
Rebecca Gatto-Wood				

FEIN:	Barred Until	Fiscal Officer	Notes:
	05/18/2009		As an individual. See Diracon Commercial Contractors.

Company Name	Address	City	State	Zip Code
Republic Construction & Management Inc	8111 7th Avenue	Brooklyn	NY	11228

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3178177	12/10/2007	NYC	and Azam Ali Chaudhry - falsified payrolls - plea agreement

Company Name	Address	City	State	Zip Code
Robbye Bissesar	89-51 Springfield Blvd	Queens Village	NY	11427

FEIN:	Barred Until	Fiscal Officer	Notes:
			As an individual. See Star International Inc -permanently debarred

Company Name	Address	City	State	Zip Code
Robert Amendola	1084 Sunrise Highway	Amityville	NY	11701

FEIN:	Barred Until	Fiscal Officer	Notes:
	03/19/2008		As an individual. See Westwood Fence Corp.

Company Name	Address	City	State	Zip Code
Robert DeMonte	367 Veterans Memorial Hwy	Commack	NY	11725

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/10/2010		As an individual. See L & T Plumbing Corp.

Company Name	Address	City	State	Zip Code
Robert Stevenson	571 Miles Square Road	Yonkers	NY	10701

FEIN:	Barred Until	Fiscal Officer	Notes:
	04/04/2012		As an individual. See R S Construction Company LLC

Company Name	Address	City	State	Zip Code
Robert W Metzgar	11365 Center Road	Sheridan	NY	14135

FEIN:	Barred Until	Fiscal Officer	Notes:
	04/04/2010	DOL	dba King Machine - Also as an individual.

Company Name	Address	City	State	Zip Code
Roger A Hoek Jr				

FEIN:	Barred Until	Fiscal Officer	Notes:
	06/10/2010		See N F K Excavating and Construction Inc

Company Name	Address	City	State	Zip Code
Rudolph Neuss	8 Far Horizons Drive	Newburgh	NY	12550

FEIN:	Barred Until	Fiscal Officer	Notes:
	09/06/2011	DOL	As an individual - see Neuss Construction Inc

Company Name	Address	City	State	Zip Code
Rusmar Environmental Services Corp	703 Atlantic Avenue	Rochester	NY	14609

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1492326	12/22/2009	AG	And John Bradford as an individual. Falsified payrolls. Plea agreement.

Company Name	Address	City	State	Zip Code
Russell Babb				

FEIN:	Barred Until	Fiscal Officer	Notes:
	07/21/2008		As an individual - See Olympic Window Installers Inc

Company Name	Address	City	State	Zip Code
Savvas A. Savva				

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/14/2008		See Euro Craft Restoration Inc

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Sean Campion	P O Box 82	Valatie	NY	12184

FEIN:	Barred Until	Fiscal Officer	Notes:
	10/14/2008		dba Everlasting Slate - as an individual

Company Name	Address	City	State	Zip Code
Shirley J Pardee	197 U S Route 11	Central Square	NY	13036

FEIN:	Barred Until	Fiscal Officer	Notes:
	03/12/2009		As an individual. See Dalton Steel Inc dba Pardee Construction.

Company Name	Address	City	State	Zip Code
Signal Construction LLC	199 Grider Street	Buffalo	NY	14215

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1610415	11/14/2011	DOL	Multiple willful violations

Company Name	Address	City	State	Zip Code
Sky Communications Inc	P O Box 278	DeWitt	NY	13214

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1599397	02/20/2012	DOL	Additional address: 6305 Court Street Road, East Syracuse, NY 13057, and Jay Meyer, individually - multiple willful violations

Company Name	Address	City	State	Zip Code
SN Contracting Corp	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/25/2012	AG	Plea Agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
SNA Contracting Corp	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3502738	01/25/2012	AG	Plea Agreement with A.G.'s Office - additional FEIN # 11-3617489. Also Peter Gouzos as an individual. Falsified records

Company Name	Address	City	State	Zip Code
Solomon Werzberger	56 Lyncrest Drive	Monsey	NY	10952

FEIN:	Barred Until	Fiscal Officer	Notes:
	08/18/2010		As an individual. See Olympia Mechanical Piping & Heating Incorporated

Company Name	Address	City	State	Zip Code
Southwestern General Contracting Inc	1586 Gowans Road	Angola	NY	14006

FEIN:	Barred Until	Fiscal Officer	Notes:
16-1569822	10/08/2009	DOL	Falsification of records

Company Name	Address	City	State	Zip Code
Spiridon Anthoulis	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/25/2012	AG	As an individual - See 4-A General Construction Corp

Company Name	Address	City	State	Zip Code
Stacey Gouzos				

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/25/2012		See Anastasia Anthoulis

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Stamatia Kallergis	159 92nd Street	Brooklyn	NY	11209

FEIN:	Barred Until	Fiscal Officer Notes:
	08/07/2008	As an individual. See Franco Paints, Inc. and Mida Painting Ltd

Company Name	Address	City	State	Zip Code
Star International Inc	89-51 Springfield Blvd	Queens Village	NY	11427

FEIN:	Barred Until	Fiscal Officer Notes:	
00-1613496		DOL	Also Robbye Bissesar. Falsified payroll - permanently debarred

Company Name	Address	City	State	Zip Code
State Environmental Services Inc	1801 Stillwell Avenue	Brooklyn	NY	11223

FEIN:	Barred Until	Fiscal Officer Notes:	
11-3164259	02/25/2008	NYC	Plea agreement

Company Name	Address	City	State	Zip Code
Steve J Nictas c/o J Barr Constr	119-51 Metropolitan Ave	Jamaica	NY	11415

FEIN:	Barred Until	Fiscal Officer Notes:	
	12/14/2009	DOL	As an individual - See J Barr Construction Corp.

Company Name	Address	City	State	Zip Code
Steve Menzer	62 Neulist Avenue	Port Washington	NY	11050

FEIN:	Barred Until	Fiscal Officer Notes:
	07/17/2009	As an individual. See Bat-Jac Construction

Company Name	Address	City	State	Zip Code
Steven Tischler	1465 46th Street	Brooklyn	NY	11212

FEIN:	Barred Until	Fiscal Officer Notes:
	08/18/2010	As an individual. See Olympia Mechanical Piping & Heating Incorporated

Company Name	Address	City	State	Zip Code
Super Structure Builders Inc	99 St Nicholas Avenue	Brooklyn	NY	11237

FEIN:	Barred Until	Fiscal Officer Notes:	
11-3487355	02/19/2008	DOL	Also at 2013 Flatbush Avenue, Brooklyn, NY 11234. As a substantially owned-affiliated entity and/or successor of Cavalier Construction Corp. Falsification of records

Company Name	Address	City	State	Zip Code
Superior Jamestown Corporation	55 Jones-Gifford Avenue	Jamestown	NY	14701

FEIN:	Barred Until	Fiscal Officer Notes:	
16-1381131	03/17/2008	NYC	Falsified payroll records

Company Name	Address	City	State	Zip Code
Supreme Sport Surfaces Inc	66 Benedict Street	Castleton	NY	12033

FEIN:	Barred Until	Fiscal Officer Notes:	
16-1515966	03/02/2012	DOL	And Michael Taylor individually, R & T Supreme Sports Flooring LLC, and Northeastern Supreme Floor Co., Inc. -multiple willful violations and falsified payroll records

Company Name	Address	City	State	Zip Code
Tao General Contractors Inc	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer Notes:	
	01/25/2012	AG	Plea Agreement with A.G.'s Office

Company Name		Address	City	State	Zip Code
Tarcisio Ferreira		151-60 7th Avenue	Whitestone	NY	11357
FEIN:	**Barred Until**	**Fiscal Officer Notes:**			
	08/04/2009	AG	and Nu-Look Painting & Wallpapering Inc and TF Painting Corp. Plea agreement with A.G.'s Office.		

Company Name		Address	City	State	Zip Code
TF Painting Corp		151-60 7th Avenue	Whitestone	NY	11357
FEIN:	**Barred Until**	**Fiscal Officer Notes:**			
	08/04/2009	AG	and Nu-Look Painting & Wallpapering Inc. and Tarcisio Ferreira, individually. Plea agreement with A.G.'s Office.		

Company Name		Address	City	State	Zip Code
Thomas E Mooney		164 Winslow Street	Watertown	NY	13601
FEIN:	**Barred Until**	**Fiscal Officer Notes:**			
	11/07/2011		As an individual. Additional address: 150 Clinton Street, Apt 6, Watertown, NY 13601. See Paragon Plate Glass Inc		

Company Name		Address	City	State	Zip Code
Thomas Hanlon					
FEIN:	**Barred Until**	**Fiscal Officer Notes:**			
	09/11/2008		As an individual. See Hamax Construction Corp		

Company Name		Address	City	State	Zip Code
Thomas L Smalls		24 Miller Street	Rochester	NY	14605
FEIN:	**Barred Until**	**Fiscal Officer Notes:**			
	06/30/2009	DOL	dba LTS Construction - also as an individual. Falsified payrolls.		

Company Name		Address	City	State	Zip Code
Thomas Masonry & Concrete Inc		803 West Avenue, Ste 207	Rochester	NY	14611
FEIN:	**Barred Until**	**Fiscal Officer Notes:**			
16-1535306	08/18/2009	DOL	Multiple willful violations		

Company Name		Address	City	State	Zip Code
Thomas Masonry Enterprise Inc		955 Buffalo Road	Rochester	NY	14624
FEIN:	**Barred Until**	**Fiscal Officer Notes:**			
73-3103284	08/18/2009	DOL	Multiple willful violations		

Company Name		Address	City	State	Zip Code
Tommaso Allocca		15 Pine Aire Drive	Bay Shore	NY	11706
FEIN:	**Barred Until**	**Fiscal Officer Notes:**			
	08/01/2010	DOL	As an individual. T/A A & D Contracting Corp. Falsification of payroll records		

Company Name		Address	City	State	Zip Code
Topo-Metrics Inc		432 Park Avenue South	New York	NY	10016
FEIN:	**Barred Until**	**Fiscal Officer Notes:**			
11-2465550	04/22/2009	DOL	Falsification of payroll records		

Company Name		Address	City	State	Zip Code
Topor Contracting Inc		153 Fillmore Avenue	Buffalo	NY	14210
FEIN:	**Barred Until**	**Fiscal Officer Notes:**			
16-1590680	04/27/2009	DOL	Falsified payrolls		

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Tower Building Maintenance and Mgmt	347 Kingsland Avenue	Brooklyn	NY	11222

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3042307	11/24/2008	DOL	Additional willful violations - debarment period extended

Company Name	Address	City	State	Zip Code
Tri-State Building Contractors Inc	108 Sparrow Ridge Road	Carmel	NY	10512

FEIN:	Barred Until	Fiscal Officer	Notes:
14-1765905	05/24/2009	DOL	Falsified payroll records

Company Name	Address	City	State	Zip Code
Tropic Construction Corp	59-45 56th Avenue	Maspeth	NY	11378

FEIN:	Barred Until	Fiscal Officer	Notes:
11-2659640	08/16/2010	DOL	and Marangos Construction and Charles Marangoudakis individually. Multiple willful violations

Company Name	Address	City	State	Zip Code
Two By Four Carpentry and Constr Inc	132 W 129th St-Ste 4W	New York	NY	10027

FEIN:	Barred Until	Fiscal Officer	Notes:
	08/12/2009	AG	dba of Harrison Jarvis. Plea agreement with A.G.'s Office.

Company Name	Address	City	State	Zip Code
Uddin USA Corp	663 Degraw Street	Brooklyn	NY	11217

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3265184	05/17/2012	NYC	Falsification of payroll records

Company Name	Address	City	State	Zip Code
un Hak Kim				

FEIN:	Barred Until	Fiscal Officer	Notes:
	04/14/2010	AG	As an individual. See Howard K Enterprise Inc and Howard Kim

Company Name	Address	City	State	Zip Code
Vardo Construction Corporation	1850 Steinway Street	Long Island City	NY	11105

FEIN:	Barred Until	Fiscal Officer	Notes:
11-2694892	01/08/2009	DOL	And Lorenzo DeVardo as an individual. Falsified payrolls

Company Name	Address	City	State	Zip Code
Vasilios Tsimitras				

FEIN:	Barred Until	Fiscal Officer	Notes:
	11/27/2011		See William Tsimitras

Company Name	Address	City	State	Zip Code
Victory Roofing & Contracting Co Inc	265 Victory Boulevard	Staten Island	NY	10301

FEIN:	Barred Until	Fiscal Officer	Notes:
38-0100331	04/14/2008	DOL	and Musa Pacuku as in individual. Falsification of records

Company Name	Address	City	State	Zip Code
Viva Victoria Enterprises Ltd	10317 90th Street	Ozone Park	NY	11417

FEIN:	Barred Until	Fiscal Officer	Notes:
11-3355466	06/12/2011	NYC	Falsification of records

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
W & B Mechanical Corp	303 Ten Eyck Street	Brooklyn	NY	11206

FEIN:	Barred Until	Fiscal Officer Notes:	
11-1340725	03/05/2010	DOL	aka White and Blue Sheet Metal Inc and Eliyhu Benyamin as an individual. Falsification of records.

Company Name	Address	City	State	Zip Code
W J Grinder Roofing Company	1765 Mt Read Boulevard	Rochester	NY	14606

FEIN:	Barred Until	Fiscal Officer Notes:	
16-0846854	10/18/2009	DOL	As a substantially affiliated employer. See A A General Contractors, Inc. Multiple violations

Company Name	Address	City	State	Zip Code
Westwood Fence Corp	1084 Sunrise Highway	Amityville	NY	11701

FEIN:	Barred Until	Fiscal Officer Notes:	
11-3084236	03/19/2008		And Robert Amendola as an individual. Falsified payrolls. Plea agreement entered into with Suffolk County D.A.'s Office.

Company Name	Address	City	State	Zip Code
White and Blue Sheet Metal Inc	303 Ten Eyck Street	Brooklyn	NY	11206

FEIN:	Barred Until	Fiscal Officer Notes:	
	03/05/2010		See W & B Mechanical Inc.

Company Name	Address	City	State	Zip Code
Wiley Development Co Inc	235 Northampton Street	Buffalo	NY	14208

FEIN:	Barred Until	Fiscal Officer Notes:	
16-1363561	08/11/2009	DOL	Falsified payroll records

Company Name	Address	City	State	Zip Code
William Tsimitras	235 91st Street	Brooklyn	NY	11209

FEIN:	Barred Until	Fiscal Officer Notes:	
	11/27/2011	DA	aka Vasilios, individually - Plea agreement with Albany County DA

Company Name	Address	City	State	Zip Code
William Valentine				

FEIN:	Barred Until	Fiscal Officer Notes:	
	09/11/2008		As an individual. See Hamax Construction Corp

Company Name	Address	City	State	Zip Code
Willie Jones	1537 Union Street	Schenectady	NY	12309

FEIN:	Barred Until	Fiscal Officer Notes:	
	05/24/2009	DOL	As an individual. See Pachyderm Enterprises Inc

Company Name	Address	City	State	Zip Code
Winston J Goins Sr	87 Malling Drive	Rochester	NY	14621

FEIN:	Barred Until	Fiscal Officer Notes:	
	05/01/2011		As an individual - see Lightning Fast Labor Force Services Inc

Company Name	Address	City	State	Zip Code
Wintech Contracting Inc	1950 E Main St - Ste 205A	Mohegan Lake	NY	10547

FEIN:	Barred Until	Fiscal Officer Notes:	
13-3139312	07/22/2009	DOL	Falsified payroll records

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Company Name	Address	City	State	Zip Code
Yang General Contracting Ltd	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
	01/25/2012	AG	Plea agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
Yin Construction Ltd	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
13-0520288	01/25/2012	AG	Plea Agreement with A.G.'s Office

Company Name	Address	City	State	Zip Code
Zaffuto Construction Company Inc	162 Atlantic Avenue	Lynbrook	NY	11563

FEIN:	Barred Until	Fiscal Officer	Notes:
11-2139574	09/29/2008	AG	And Angelo Zaffuto (President of ZCCI) and Joseph Zaffuto (Key Person to ZCCI), as individuals -Settlement Agreement

Company Name	Address	City	State	Zip Code
Zarben General Construction Inc	131 47th Street	Brooklyn	NY	11232

FEIN:	Barred Until	Fiscal Officer	Notes:
13-4201564	01/25/2012	AG	Plea Agreeement with A.G.'s Office

SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Project consists of, but is not limited to, establishing site controls, installing stormwater pollution prevention devices, clearing and grubbing the site, removal and delivery of utility poles and associated electrical equipment on the project site to the owner, removal of an existing stone monument and delivery to the Owner, abandonment of three small pipelines, installation of two bulkheads along the riverfront, installation of rip-rap revetment to provide shoreline protection in non-bulkhead zones, excavation and off-site disposal of contaminated soils, backfilling the excavated areas with on-site materials and imported clean fill, temporary management of impacted groundwater, the removal of an underground storage tank and six-inch pipeline containing groundwater and/or weathered petroleum product, site grading, installation of geotextile demarcation barrier across the site, placing and compacting soils, abandonment of monitoring wells, and performing quality assurance/quality control (QA/QC) testing and other related work. An alternate for the project includes the placement of topsoil on the property and the establishment of vegetation via seeding and mulching the site.

1. Project Location: Intersection of Rinaldi Boulevard and Pine Street, City of Poughkeepsie, Dutchess County, New York.

2. Project Description: The DeLaval property is a single parcel of land that is approximately 13.95-acres is size. The property has 2,200 feet of direct waterfront along the Hudson River. The parcel is vacant and is largely overgrown by grass and other forms of vegetation. The property is bordered to the north by a former sewage treatment plant that was recently developed for a restaurant/catering facility known as the Grandview, to the east by railroad tracks owned and operated by MTA Metro North Railroad, to the south by petroleum bulk storage tanks owned and operated by Love/Effron Fuel Oil Co., and the Hudson River to the west. The Limit of Work for this project has been identified on the Contract Drawings.

3. Owner: City of Poughkeepsie

B. Engineer Identification: The Contract Documents, dated August 8, 2007, were prepared for Project by Clough Harbour & Associates, LLP.

C. The Work consists of, but is not limited to:

1. Site Preparation: Includes, but is not limited to, the installation of temporary stormwater pollution prevention devices, the setup of site control devices (e.g. fencing and gates) and decontamination pads, removal of existing utility poles, flag poles and antennae on the site, salvaging a monument near the site entrance, clearing and grubbing the entire project area, abandonment of existing monitoring wells, abandonment of existing small diameter pipe outfalls, etc.

2. Bulkhead Installation: Includes, but is not limited to, the removal of portions of the existing bulkhead and elevated platform over the waterfront necessary to facilitate the installation of the new bulkheads, the driving of steel sheet piling, the sealing of the joints between the sheet pile sections, the installation of steel wales, the installation of a steel sheet pile anchor wall, the installation of tie-rods, the installation of a concrete cap, the installation of structural backfill behind the sheeting, the installation of rip-rap, bedding stone, and geotextile fabric for the bulkhead revetment, and the installation of concrete collars around each outfall that penetrates the bulkhead. Demolished concrete material will be crushed on-site for reuse as fill material.

3. Rip-Rap Revetment Shoreline Protection: Includes the installation of rip-rap, stone bedding, and geotextile fabric along the riverfront, the installation of a concrete barrier at the top of the rip-rap shoreline protection system, and the installation of concrete headwalls to existing utility outfalls.

4. Excavations in Areas of Concern: Includes, but is not limited to, the excavation and temporary stockpiling of surficial soils deemed suitable for use as backfill by the Engineer and the New York State Department of Environmental Conservation, the excavation and off-site disposal of grossly-impacted soils, the temporary management of petroleum impacted groundwater, the removal of an existing underground storage tank and 6-inch diameter pipeline, the placement and compaction of stockpiled soil, topsoil, crushed concrete and/or clean imported backfill in each excavation, the installation of a geotextile fabric (demarcation barrier) beneath any clean backfill and the soil cover layer, the removal and disposal of any concrete or other building materials necessary to complete the proposed excavations, and analytical testing of soils and groundwater.

5. Subgrade Preparation: Includes, but is not limited to, minor site grading activities prior to the installation of the soil cover layer.

6. Soil Cover Layer Installation: Includes, but is not limited to, the installation of a non-woven geotextile fabric demarcation barrier across the site, the placement of a one-foot thick soil cover and final site cleanup. As an alternate, the final soil cover system may include the installation of topsoil and establishing vegetation across the project site. The Contractor will be required to provide the future Developer of the Project Site forty-five (45) days to complete rough grading activities and the installation of subsurface utilities prior to the installation of the demarcation layer and soil cover.

1.3 CONTRACT

A. Project will be constructed under a general construction contract.

1.4 WORK SEQUENCE

A. The Work shall be conducted in four phases.

1. Phase 1: Install appropriate erosion and sediments controls and other site controls. Once in place, the shoreline work will commence, beginning with the installation of the bulkhead in Zone 1. After Zone 1 is complete, the bulkhead in Zone 3 will be installed. Clearing and grubbing will be limited to those areas necessary to facilitate the installation of the bulkheads.

2. Phase 2: After the bulkhead in Zone 1 is complete, the Contractor may begin excavating the grossly contaminated soil in AOC-1 and after the bulkhead in Zone 3 is complete, the Contractor may begin the excavations in AOC-2/3. With the exception of using existing on-site fill soil that is not "grossly-contaminated" in AOC-1, the excavation in AOC-1 should be backfilled and stabilized prior to proceeding with additional excavations. Similarly, all other excavations shall be backfilled and stabilized prior to installing the final soil cover layer. The installation of the rip-rap shoreline revetment, the abandonment of monitoring wells, removal of utility poles, etc. may proceed prior to or simultaneously with the AOC excavations. After all demolition and removal work is complete, the remaining portions of the site will be cleared and grubbed.

3. Phase 3: After the installation of the bulkheads, the excavations to remove contaminated soils from AOC-1 and AOC-2/3, and the demolition/clearing activities, the future Developer will be permitted to enter the DeLaval site for a period of forty five (45) days to install subsurface utilities and strip topsoil from the site.

4. After the future Developer completes their utility installation and topsoil removal, the Contractor will complete the installation of the geotextile demarcation layer and the installation of the soil barrier layer. The final site restoration (e.g. topsoil, pavement, buildings, etc.) will likely be completed by the Developer, unless the alternate specified above is implemented.

1.5 USE OF PREMISES

A. General: Contractor shall have full use of premises for construction operations, including use of Project site, during construction period. Contractor's use of premises is limited only by Owner's right to perform work or to retain other contractors on portions of Project. This includes providing a thirty (30) day period for the future Developer to mobilize to the site to install subsurface utilities and strip topsoil from the site.

1.6 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "MasterFormat" numbering system.

1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

   a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01100

SECTION 01140 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 USE OF PREMISES

A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.

1. Limits: Confine constructions operations to areas within the contract limits indicated.

2. Hours of Operation: Contractor shall be limited to operations between 7:00 AM and 7:00 PM, Monday though Friday and between 8:00 AM and 5:00 PM on Saturdays. No work shall be preformed at any other times with the consent of the Owner and Engineer.

3. After the excavation activities within the Areas of Concern, as shown on the Drawings, are complete, the Contractor will be required to provide the future Developer of the DeLaval property access to the site for a period of forty-five (45) in which the Developer will strip the remaining topsoil from the site, complete rough grading activities, complete the installation of subsurface utilities, and use acceptable soil excavated from the site as backfill material within the Areas of Concern.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01140

SECTION 01210 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing allowances.

1. Certain materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:

1. Lump-sum allowances.
2. Unit-cost allowances.
3. Contingency allowances.
4. Testing and inspecting allowances.
5. Quantity allowances.

1.3 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Engineer of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Engineer's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Engineer from the designated supplier.

1.4 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.5 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Engineer for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.6 TESTING AND INSPECTING ALLOWANCES

A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.

B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure.

C. Costs of services not required by the Contract Documents are not included in the allowance.

D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.7 UNUSED MATERIALS

A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Engineer, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Engineer, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: Additional Soil & Groundwater Sampling

1. Allowance No. 1: Include a lump sum of $5,000 for additional soil and groundwater testing ordered by the Engineer or the New York State Department of Environmental Conservation.

END OF SECTION 01210

SECTION 01230 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1: Reduce the thickness of the Soil Cover Layer from 12 inches to 6 inches. Install 6 inches of topsoil in accordance with Section 02920 – "Topsoil" over a 6-inch thick Soil Cover Layer and establish vegetation in accordance with Section 02930 – "Seeding."

END OF SECTION 01230

SECTION 01250 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications to correct errors with the plans and specifications, provide for unforeseen property conditions, or for construction emergencies. A construction emergency is defined as damage to or a malfunction in building or property of the Owner caused by an unanticipated and sudden occurrence which involves a pressing necessity for immediate repair, reconstruction or maintenance in order to protect property of the Owner, or the life, health or safety of any person.

1.3 MINOR CHANGES IN THE WORK

A. Engineer will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1.4 PROPOSAL REQUESTS

A. Overhead and Profit Requirements: Per New York State Department of Environmental Conservation, the following not-to-exceed percentages are applicable to changes in the Work:

1. Contractor's combined overhead and profit on labor costs: 15 percent maximum.

2. Contractor's combined overhead and profit on materials and equipment: 10 percent maximum.

3. If the work is performed by a Subcontractor:

a. Subcontractor's overhead and profit percentage: 10 percent maximum.
b. Contractor's combined overhead and profit: 5 percent maximum.

4. Overhead and profit applies to payroll taxes such as unemployment insurance, FICA, worker's compensation, but does not apply to personal liability and property damage insurance.

B. Owner-Initiated Proposal Requests: Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Engineer are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.

2. Within seven (7) days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

c. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

C. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Engineer.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

4. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

5. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

D. Proposal Request Form: For Change Order proposals, use CSI Change Order Request (proposal format). A sample copy is included at end of this Section.

1.5 ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.

2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.

3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.

4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within 14 days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than 14 days after such authorization.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been forseen from information in the Contract Documents.

2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.6 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Engineer will issue a Change Order for signatures of Owner and Contractor on form included at end of Part 3.

B. The Engineer will submit all change orders to the New York State Department of Environmental Conservation within 30 days of such occurrence.

C. Project changes which will substantially alter the design or scope of the project, or the location, size, capacity or quantity of any major component, or which will require fund in addition to those provided by contingency State funds must receive formal approval by the New York State Department of Environmental Conservation prior to execution.

1.7 WORK CHANGE DIRECTIVE

A. Work Change Directive: Engineer may issue a Work Change Directive on form included at end of Part 3. Work Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01250

CHANGE ORDER REQUEST (PROPOSAL)

Project: The DeLaval Property
Environmental Restoration Proj.

To: _____

_____

Re: _____

Change Order Request Number: _____

From (Contractor): _____

Date: _____

A/E Project Number: _____

Contract For: _____

This change Order Request (C.O.R.) contains an itemized quotation for changes in the Contract Sum or Contract Time in response to proposed modifications to the Contract Documents based on Proposal Request No._____.

Description of Proposed Change:

Attached supporting information from: ☐ Subconractor ☐ Supplier ☐ _____ ☐ _____

Reason For Change:

Does Proposed Change involve a change in Contract Sum? ☐ No ☐ Yes [Increase] [Decrease] $ _____

Does Proposed Change involve a change in Contract Time? ☐ No ☐ Yes [Increase] [Decrease] _____days

Attached pages: ☐ Proposal Worksheet Summary: _____
☐ Proposal Worksheet Detail(s): _____

Signed by: _____

Copies: ☐ Owner Consultants ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ File

July 1994
CSI Form 13.6A

CHANGE ORDER

NO. ____

PROJECT: The DeLaval Property - Environmental Restoration Program

DATE OF ISSUANCE: _____ EFFECTIVE DATE: _____

OWNER: City of Poughkeepsie

OWNER'S Contract No. _____

CONTRACTOR _____ ENGINEER Clough Harbour & Associates LLP

You are directed to make the following changes in the Contract Documents.

Description: _____

Reason for Change Order: _____

Attachments: _____

CHANGE ORDER IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: $ _____	Original Contract Times Substantial Completion: _____ Ready for final payment: _____ (days or dates)
Net changes from previous Change Orders No. to . $ _____	Net changes from previous Change Orders No. to . _____ days
Contract price prior to this Change Order: $ _____	Contract Times prior to this Change Order Substantial Completion: _____ Ready for final payment: _____
Net increase (decrease) of this Change Orders $ _____	Net increase (decrease) of this Change Orders _____ days
Contract price with all approved Change Orders: $ _____	Contract Times with all approved Change Orders Substantial Completion: _____ Ready for final payment: _____

This change order represents full and complete compensation for all costs relative to the change itself and all other impacts on the project. Contractor hereby acknowledges that it has considered and priced into this change order impacts beyond the scope of the individual change order and waives all claims otherwise.

RECOMMENDED:	APPROVED:	ACCEPTED:
BY: _____	BY: _____	BY: _____
Engineer (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)
Date: _____	Date: _____	Date: _____

EJCDC NO. 1910-8-B (1990 Edition)
Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America

WORK CHANGE DIRECTIVE

No. _____

DATE OF ISSUANCE _____ EFFECTIVE DATE _____

OWNER City of Poughkeepsie
CONTRACTOR _____
Contract: _____
Project: The DeLaval Property – Environmental Restoration Program
OWNER's Contract No. _____ ENGINEER's Project No. 14357

You are directed to proceed promptly with the following change(s):
Description:

Purpose of Work Change Directive:

Attachments: (List documents supporting change)

If OWNER or CONTRACTOR believe that the above change has affected Contract Price any Claim for a Change Order based thereon will involve one or more of the following methods as defined in the Contract Documents.

Method of determining change in Contract Price:

☐ Unit Prices
☐ Lump Sum
☐ Cost of the Work_____

Estimated increase (decrease) in Contract Price:
$_____.
If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Estimated increase (decrease) in Contract Times:
Substantial Completion: _____ days;
Ready for final payment: _____ days.

RECOMMENDED:

_____
ENGINEER
By: _____

AUTHORIZED:

_____
OWNER
By: _____

EJCDC No. 1910-8-F (1996 Edition)
Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America and the Construction Specifications Institute.

WORK CHANGE DIRECTIVE

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

For supplemental instructions and minor changes not involving a change in the Contract Price or the Contract Times a Field Order should be used.

B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

Engineer initiates the form, including a description of the items involved and attachments.

Based on conversations between Engineer and Contractor, Engineer completes the following:

> METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE: Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the estimated price or Contractor may stop the changed Work when the estimated time is reached. If the Work Change Directive is not likely to change the Contract Price, the space for estimated increase (decrease) should be marked "Not Applicable".

Once Engineer has completed and signed the form, all copies should be sent to Owner for authorization because Engineer alone does not have authority to authorize changes in Price or Times. Once authorized by Owner, a copy should be sent by Engineer to Contractor. Price and Times may only be changed by Change Order signed by Owner and Contractor with Engineer's recommendation.

Paragraph 10.03.A.2 of the General Conditions requires that a Change Order be initiated and processed to cover any undisputed sum or amount of time for Work actually performed pursuant to this Work Change Directive.

Once the Work covered by this directive is completed or final cost and times are determined, Contractor should submit documentation for inclusion in a Change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR CONTRACT TIMES. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.

SECTION 01270 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for unit prices.

1.3 DEFINITIONS

A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit. The Owner is tax exempt.

B. It is the Contractor's responsibility to measure all work-in-place. All quantities reported by the Contractor will be verified by the Engineer. The Contractor and Engineer shall agree to the quantities for work-in-place at a maximum interval of one time per week.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. The estimated quantities of work to be done and materials to be furnished are approximate. The quantities have been estimated for the purpose of comparison of the bids and are not to be assumed to be the actual final quantities which will be necessary to complete the work. The Owner reserves the right to increase or diminish any or all of the quantities of work as Owner sees appropriate. Increases or decreases in quantities from those estimated in the bid will not be considered sufficient grounds for granting an increase in the unit price bid.

E. No direct or separate payment will be made for any work required by the Specifications or Drawings unless it is defined as a pay item. Full payment for all such labor, materials, tools, equipment, supervision, incidentals, and work required is included under the unit price or lump sum pay items.

F. No direct or separate payment will be made for providing miscellaneous temporary or accessory works, plant, services, Contractor's office, Engineer's field office, layout surveys, job signs, sanitary requirements, testing, safety devices, approval and record drawings, water supplies, power, intermediate demobilizations, remobilizations, equipment on site but not being utilized, maintaining traffic, removal of remaining waste, watchman, bonds, insurance and all other items as required by the General Conditions, Supplementary Conditions, and the General Requirements. Compensation for all such services, materials, and related work is to be included in the prices stipulated for the unit and lump sum pay items listed herein.

G. List of Unit Prices: A list of unit price items is included at the end of this Section. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 UNIT PRICE SCHEDULE

A. Item No. 1 – Mobilization/Demobilization

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required for mobilization and demobilization of all construction equipment, machinery, tools, etc. necessary to complete the project work, project start-up costs and project close-out costs, clearance of publicly owned utilities, and additional costs associated with fulfilling obligations for the completion of the Project in accordance with the Contract Documents.

2. Unit of Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation for work performed. Payment for this time shall be paid in phases, as follows:

   a. Seventy (70) percent of the bid price will be paid for mobilization
   b. Thirty (30) percent of the bid price will be paid for final demobilization.

B. Item No. 2 – Health & Safety

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals necessary to prepare and implement a Health and Safety Plan in accordance with the Contract Documents and applicable laws, rules and regulations governing the Work performed under this Contract. Includes, but is not limited to, preparing Site Specific Health and Safety Plan (HASP), a Contingency Plan, monitoring for potential site contaminants, providing personal protective equipment (PPE) for all on-site personnel (including expendables to be utilized by the Engineer and the New York State Department of Environmental Conservation), and providing a qualified Health and Safety Site Supervisor whenever work is performed at the site.

2. Unit of Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation upon submittal of approved plans to Engineer.

C. Item No. 3 – Construction of Decontamination Pad

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install and maintain a decontamination pad near the site entrance in accordance with the Contract Documents. This item includes preparation and grading of the subgrade material, all stone material, non-woven geotextile, 40-mil low-linear density polyethylene (LLDPE) geomembrane, the drainage structure with a frame and grate, side overspray protection system, discharge piping, a collection sump/manhole, maintenance of the decontamination pad, testing, and the removal and off-site disposal of the sediment and water the accumulates on the pad and water collection system. This item also includes the removal and replacement of the top two inches of stone on the pad at the completion of the project for use by the Developer. This item also includes the construction of a smaller decontamination pad for decontaminating on-site personnel and small hand tools in accordance with Section "Site Management Plan."

2. Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the decontamination pad as shown on the Contract Drawings and as ordered by Engineer. Payment for this work shall be paid in phases, as follows:

   a. Eighty (80) percent of the bid price will be paid upon installation of the decontamination pad.

   b. A maximum of (10) percent of the bid price will be paid for maintenance of the decontamination pad, not to exceed five (5) percent per payment requisition.

   c. Ten (10) percent of the bid price will be paid upon removal and replacement of the surface stone at the conclusion of the remedial activities.

D. Item No. 4 – Stabilized Construction Entrance

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install and maintain a stabilized construction entrance in accordance with the Contract Documents. This item includes all stone material, filter cloth, maintenance of the entrance and the cleaning of any off-site roadways to maintain the surfaces free of sediment that is spilled, dropped, washed, or tracked onto the roadways.

2. Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the decontamination pad as shown on the Contract Drawings and as ordered by Engineer. Payment for this work shall be paid in phases, as follows:

   a. Eighty (80) percent of the bid price will be paid upon installation of the stabilized construction entrance.

   b. A maximum of ten (10) percent of the bid price will be paid for maintenance of the stabilized construction entrance, not to exceed five (5) percent per payment requisition.

   c. Ten (10) percent of the bid price will be paid upon removal and off-site disposal of the stabilized construction entrance.

E. Item No. 5 – Silt Fence

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install and maintain silt fence meeting the requirements of Section "Temporary Soil Erosion and Water Pollution Control," in accordance with the Contract Documents and as directed by Engineer. Removal of the silt fence at the completion of the project is also included under this bid item.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual length, measured in lineal feet, of silt fence installed. Measurement will not be made for waste or scrap materials, or for overlaps.

3. Payment: Full compensation for work performed. Payment for this work shall be paid in phases, as follows:

a. Sixty (60) percent of the bid price will be paid upon installation of the silt fence.

b. A maximum of thirty (30) percent of the bid price will be paid for maintenance of the silt fence, not to exceed ten (10) percent per payment requisition.

c. Ten (10) percent of the bid price will be paid upon removal and off-site disposal of the silt fence.

F. Item No. 6 – Install & Relocate Turbidity Curtain

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to provide and install a turbidity curtain in the Hudson River down-gradient of the work zones during the installation of bulkheads and rip-rap revetment. This item shall include the maintenance of the curtain and the relocation of the turbidity curtain to the active work zone prior to beginning construction in a particular work zone.

2. Unit of Measurement: The quantity to be paid for under this item shall be based on the actual length, measured in lineal feet, of turbidity curtain installed, as shown on the Contract Drawings and as directed by Engineer.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to install the turbidity curtain as shown on the Contract Drawings, as specified herein, and as ordered by the Engineer. No additional payment for relocating the curtain to other portions of the project site will be made. Payment for this work shall be paid in phases, as follows:

a. Sixty (60) percent of the bid price will be paid upon the initial installation of the turbidity curtain.

b. A maximum of thirty (30) percent of the bid price will be paid for maintenance and relocation of the turbidity curtain to the active work zones, not to exceed ten (10) percent per payment requisition.

c. Ten (10) percent of the bid price will be paid upon removal of the turbidity curtain from the project Site.

G. Item No. 7 – Temporary Chain Link Fence Gate

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install temporary fifteen foot wide chain link fence gated in accordance with the Contract Documents. This item includes all concrete footings, gate posts, post caps, frame members, rods, mesh, and gate hardware necessary to complete the installation of the gate in the location identified on the Contract Drawings. Additionally, this item includes removal of the gate systems at the conclusion of the remedial activities.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of gates installed.

3. Payment: Full compensation for work performed. Payment for this work shall be paid in phases, as follows:

a. Ninety (90) percent of the bid price will be paid upon installation of the gates.

b. Ten (10) percent of the bid price will be paid upon removal of the gates from the project Site.

H. Item No. 8 – Temporary Chain Link Fence

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install and maintain temporary chain link fencing in accordance with the Contract Documents and as directed by Engineer. This item includes all "No Trespassing" signs at intervals specified in Section "Soil Management Plan," concrete footings, posts, post caps, frame members, rods, mesh, and gate hardware necessary to complete the installation of the chain link fence in the location identified on the Contract Drawings. Removal of the chain link fence at the completion of the project is also included under this bid item.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual length, measured in lineal feet, of chain link fence installed. Measurement will not be made for waste or scrap materials, or for overlaps.

3. Payment: Full compensation for work performed. Payment for this work shall be paid in phases, as follows:

a. Ninety (90) percent of the bid price will be paid upon installation of the chain link fencing.

b. Ten (10) percent of the bid price will be paid upon removal of the fencing from the project Site.

I. Item No. 9 – Waste Characterization Soil Samples

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to collect waste characterization soil samples for the purposes of off-site soil disposal. The sampling will be performed in accordance with the Section "Site Management Plan." This item includes, but is not limited to, the collection, preservation, and packaging of the samples, delivery of the samples to the laboratory for analysis, the laboratory analysis costs, and submittal of the analytical results to the Engineer. This item does not include pre-qualification testing for imported fill materials.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of soil samples collected and submitted for analysis in accordance with the Site Management Plan.

3. Payment: Full compensation for work performed.

J. Item No. 10 – Removal of Existing Swing Gate

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to remove the existing swing gate and posts at the site entrance, as shown on the Contract Drawings, and dispose of the gate and associated equipment off-site. Additionally, the concrete foundations used to support the gates posts will be removed to a minimum of one-foot below grade under this item. The concrete will be crushed/milled on-site and temporarily stockpiled on-site for reuse as fill.

2. Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to remove and dispose the gate and posts.

K. Item No. 11 – Remove Flag Pole & Metal Antenna

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to remove the existing flagpole and metal antenna shown on the Contract Drawings and dispose of the pole and antenna and associated equipment off-site. Additionally, any concrete foundations will be removed to a minimum of one-foot below grade under this item. The concrete will be crushed/milled on-site and temporarily stockpiled on-site for reuse as fill.

2. Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to remove and dispose the flagpole and antenna.

L. Item No. 12 –Remove Utility Poles & Associated Equipment

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to coordinate the disconnection of the existing electrical service with the utility owner, removing the overhead wires associated with the poles, removal of guy wires, removal of meters and meter boards, removal of lighting fixtures, removal of transformers, and removal of other equipment mounted on the utility poles. All salvaged materials and equipment will be delivered to the Owner, specifically the City of Poughkeepsie Department of Public Works complex located at 26 Howard Street in the City of Poughkeepsie, New York.

2. Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to abandon the existing electric service to the site and stockpiling the equipment on the site for removal by the Owner.

M. Item No. 13 – Salvage Monument

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to remove and salvage the existing monument shown on the Contract Drawings and deliver it to the Owner, specifically the City of Poughkeepsie Department of Public Works complex located at 26 Howard Street in the City of Poughkeepsie, New York. Additionally, the concrete foundation will be removed to a minimum of one-foot below grade under this item. The concrete will be crushed/milled on-site and temporarily stockpiled on-site for reuse as fill.

2. Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to remove and salvage the monument.

N. Item No. 14 – Remove & Recycle Concrete

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to remove the concrete pads and the remnants of the concrete seawall along the shoreline shown on the Contractor Drawings, crush/mill the concrete and temporarily stockpile it for use as backfill on the project site. Recycle any reinforcing steel off-site. This item does not include foundations associated with gate posts, fencing systems, flag poles, antennae, and the on-site monument.

2. Measurement: The quantity to be paid for under this item shall be based on the actual number of cubic yards of concrete pads removed and recycled as shown on the Contract Drawings and as directed by Engineer.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to remove and crush the concrete pads and to stockpile the material on-site for reuse as fill.

O. Item No. 15 – Clearing & Grubbing:

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to clear and grub the area within the Limit of Work identified on the Contract Drawings. More specifically, clearing and grubbing includes, but is not limited to clearing, grubbing, scalping, removal of trees and stumps, backfilling stump holes, mowing all grass and brush to a maximum height of four inches, and removing and properly disposing of all vegetation and debris off-site. All root systems associated with trees shall be considered contaminated and will require disposal at a properly permitted facility.

2. Unit of Measurement: The quantity to be paid for under this item shall be based on the actual number of acres of land that are cleared and grubbed, as shown on the Contract Drawings and as directed by Engineer.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to clear and grub the project site as shown on the Contract Drawings, as specified herein, and as ordered by the Engineer.

P. Item No. 16 – Clearing Rock Outcropping

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to clear, grub, and remove all soil to bare rock on the bedrock outcropping near the entrance to the project Site (east side) as indicated on the Contract Drawings. All materials removed from the rock outcropping shall be disposed of off-site.

2. Unit of Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to clear, grub, and remove all soil to bare rock on the bedrock outcropping near the entrance to the project Site as shown on the Contract Drawings, as specified herein, and as ordered by the Engineer.

Q. Item No. 17 – Protection of Tree Root Systems

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to hand excavate soils around the root systems of trees designated to remain. After removing approximately six inches of topsoil around each tree, a demarcation barrier will be installed around the roots and the area will be backfilled to the approximate original grade with clean topsoil. Finally, a minimum of six inches of pine bark will be installed over the topsoil to provide a final thickness of at least one-foot of topsoil and mulch over the existing root systems. This item also includes the off-site disposal of excavated soils, roots and tree branches removed as part of this work.

2. Unit of Measurement: The quantity to be paid for under this item shall be based on the actual number of trees designated to remain on the Contract Drawings and as directed by Engineer.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to hand excavate and backfill on the root systems of trees designated to remain on the Contract Drawings, as specified herein, and as ordered by the Engineer.

R. Item No. 18 – Monitoring Well Abandonment

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to abandon existing monitoring wells identified on the Contract Drawings in accordance with the requirements in Section "Monitoring Well Abandonment." Proper off-site disposal of all removed well materials, including the steel protective casing, the well cap and plug, locks, the PVC riser and well screen, and the concrete pad shall be included under this item. This item also includes the grouting of the former monitoring well location and the installation of a bentonite surface seal.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of monitoring wells abandoned.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to abandon the monitoring wells where identified in the Contract Drawings.

S. Item No. 19 – 2" Waterline Removal

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to abandon and the existing two (2)-inch diameter waterline identified on the Contract Drawings. Proper off-site disposal of all removed pipe materials shall be included under this item.

2. Measurement: The quantity to be paid for under this item shall be based length, measured in lineal feet, of (2)-inch diameter waterline removed.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to remove the (2)-inch diameter pipes where identified in the Contract Drawings.

T. Item No. 20 – 4" Pipe Outfall Abandonment

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to abandon the existing four (4)-inch diameter pipe outfall identified on the Contract Drawings in accordance with the pipe abandonment detail. Proper off-site disposal of all removed pipe materials shall be included under this item.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of four (4)-inch diameter pipes abandoned.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to abandon the four (4)-inch diameter pipes where identified in the Contract Drawings.

U. Item No. 21 – 8" and 12" Pipe Outfall/Intake Abandonment

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to abandon the existing eight (8)-inch diameter and twelve (12))-inch diameter pipe outfalls identified on the Contract Drawings in accordance with the pipe abandonment detail. Proper off-site disposal of all removed pipe materials shall be included under this item.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of eight (8)-inch diameter and twelve (12)-inch diameter pipes abandoned.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to abandon the (8)-inch diameter and twelve (12)-inch diameter pipes where identified in the Contract Drawings.

V. Item No. 22 – Excavate & Remove 6" Fuel Oil Pipeline

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to remove any residual/weathered product from the existing six (6)-inch diameter fuel oil pipeline identified ion the Contract Drawings and dispose of the material at an appropriately permitted off-site disposal facility. This item also includes the removal of the pipeline from the shoreline to the east end of the pipe and off-site disposal of the pipe.

2. Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to remove the product form the six (6)-inch diameter pipeline and dispose the product and pipeline off-site.

W. Item No. 23 – Excavate, Clean, Remove & Dispose UST

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to remove and clean an existing underground storage tank in accordance with Sections "Tank System Closure" and "Tank Cleaning", respectively. This item includes, but is not limited to providing a crew and vacuum truck to remove and dispose off-site all liquid and sludge from the tank, cleaning the tank and disposal of the cleaning liquids, inerting the tank, air monitoring, and removal of the tank and all product/vent piping and disposing these materials off-site.

2. Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary remove and clean the existing underground storage tank identified on the Contract Drawings.

X. Item No. 24 – Excavate Soil & Stockpile for Reuse

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to excavate, load, haul, and temporary stockpile on-site soils suitable for reuse as backfill. Soils must be compactable in accordance with the Section "Earthwork" and not found to be grossly-contaminated, as determined by the Engineer and the New York State Department of Environmental Conservation. Any erosion and sediment controls necessary for the temporary stockpiling of on-site soils should be included under this item. Excavation areas for this item include the areas of concern, as shown on the Contract Drawings only.

2. Unit of Measurement: The quantity to be paid for under this item shall be based upon the actual number of cubic yards of soil excavated and stockpiled on-site.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to excavate, load, haul, stockpile, and provide dust and erosion controls for the on-site soils planned for reuse as fill.

Y. Item No. 25 – Excavate Grossly-Contaminated Soils for Off-Site Disposal

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to excavate, load, haul, and dispose off-site at a properly permitted facility, soils determined to be grossly-contaminated by the Engineer or the New York State Department of Environmental Conservation, in accordance with the Site Management Plan. Debris and other materials deemed unsuitable for use as backfill and requiring off-site disposal shall be included under this item. Additionally, the lining of dump trucks, decontamination of trucks after handling impacted soils, procurement of appropriate hauling permits/licenses, costs of providing disposal documentation to the Engineer, and other costs related to the off-site disposal of grossly-contaminated soils should be included under this item.

2. Unit of Measurement: The quantity to be paid for under this item shall be based upon the actual number of tons of soil excavated and disposed of off-site. Disposal tickets will be provided to verify the actual tonnage of soil disposed of at the permitted disposal facility.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to excavate, load, haul, and dispose of grossly-contaminated soil and debris materials unsuitable for use as backfill at a properly permitted, off-site disposal facility.

Z. Item No. 26 – Confirmatory Soil Samples

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to collect confirmatory soil samples from the area of concern excavation limits in accordance with the Section "Site Management Plan". This item includes, but is not limited to, the collection, preservation, and packaging of the samples, delivery of the samples to the laboratory for analysis, the laboratory analysis costs, and submittal of the analytical results to the Engineer.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of soil samples collected and submitted for analysis in accordance with the Site Management Plan.

3. Payment: Full compensation for work performed.

AA. Item No. 27 – Place & Compact On-Site Soils & Recycled Concrete

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to load, haul, place, and compact all on-site topsoil, soil, and recycled concrete in the area of concern excavations in accordance with the Section "Earthwork" and the Contract Documents. This item includes all prequalification testing, all field QA/QC testing required by the Contract Specifications, and submission of all test results to Engineer.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of cubic yards in place determined from actual field measurements completed by the Engineer after compaction and is accepted by the Engineer.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to load, haul, place, and compact all on-site topsoil, soil, and recycled concrete in the area of concern excavations.

BB. Item No. 28 – Place & Compact Imported Clean Fill

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to place and compact imported, clean fill meeting the requirements of Select Fill in Section "Earthwork," in the areas of concern and in accordance with the Contract Documents. This item includes all prequalification testing, all field QA/QC testing required by the Contract Specifications, and submission of all test results to Engineer.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of cubic yards in place determined from actual field measurements completed by the Engineer after compaction is accepted by the Engineer.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the barrier protection fill.

CC. Item No. 29 – Install 24" HDPE Pipe & Outfall

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install twenty-four (24)-inch diameter storm sewer pipe at the locations identified on the Contract Drawings. This item includes, but is not limited to, the excavation of the storm sewer trench and stockpiling of the soils on-site for reuse as backfill in the areas of concern, lining the trench with a non-woven geotextile fabric, all stone bedding and clean backfill materials, twenty (20) foot long sections of pipe at each outfall location installed at the specified grade, a pipe plug, a 2"x4" painted wood pipe location marker, and a concrete headwall/bulkhead encasement with check valve at each outfall.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of twenty-four (24)-inch diameter storm sewer pipe outfalls installed.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the twenty-four (24)-inch diameter storm sewer pipe outfalls where identified in the Contract Drawings.

DD. Item No. 30 – Install 36" HDPE Pipe & Outfall

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install thirty-six (36)-inch diameter storm sewer pipe at the locations identified on the Contract Drawings. This item includes, but is not limited to, the excavation of the storm sewer trench and stockpiling of the soils on-site for reuse as backfill in the areas of concern, lining the trench with a non-woven geotextile fabric, all stone bedding and clean backfill materials, twenty (20) foot long sections of pipe at each outfall location installed at the specified grade, a pipe plug, a 2"x4" painted wood pipe location marker, and a concrete headwall/bulkhead encasement with check valve at each outfall.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of thirty-six (36)-inch diameter storm sewer pipe outfalls installed.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the thirty-six (36)-inch diameter storm sewer pipe outfalls where identified in the Contract Drawings.

EE. Item No. 31 – Weep Hole Extensions

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install the weep hole extensions at the locations identified on the Contract Drawings. This item includes, but is not limited to, the cleaning and removal of debris at each weep hole location to be connected to the closed sewer system, the installation of a stainless steel plate on the existing concrete retaining wall using caulk and anchors, fernco couplings, and four (4)-inch diameter PVC pipe and necessary fittings.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of weep hole extensions connected to the closed sewer system.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the weep hole extensions where identified in the Contract Drawings.

FF. Item No. 32 – Install 8" PVC Pipe

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install eight (8)-inch diameter PVC pipe where identified on the Contract Documents. More specifically, this item includes all trenching activities and the staging of trench cuttings for reuse as backfill in the Areas of Concern, all pipe bedding and backfill materials, the PVC pipe, and pipe fittings.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual length, measured in lineal feet, of (8)-inch diameter PVC pipe installed.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the (8)-inch diameter PVC pipe where identified in the Contract Drawings.

GG. Item No. 33 – Install Precast Concrete Manholes

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install precast stormwater manholes at the locations identified on the Contract Drawings. This item includes, but is not limited to, precast concrete base, riser and top slab sections, grade rings, steps, butyl rope joint sealer, asphalt sealers, gravel subbase, geotextile fabric, frames, and covers required to complete the manholes (Section "Drainage Structures") as specified and shown the Contract Documents

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of precast manholes installed.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install precast concrete manholes where identified in the Contract Drawings.

HH. Item No. 34 – Connect 8" PVC Pipe to Existing Manhole

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to connect the (8)-inch diameter PVC pipe to an existing precast concrete manhole at the locations identified on the Contract Drawings. This item includes, but is not limited to, coring through the precast structure, installing a flexible neoprene boot seal assembly, providing a flexible point joint outside the manhole, and using non-shrink grout to seal any potential holes in the structure.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of connections made to existing manholes.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to connect an (8)-inch diameter PVC pipe to an existing precast concrete manhole where identified in the Contract Drawings.

II. Item No. 35 – Site Grading

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals necessary for conducting minor grading activities within the limits of the soil cover layer, as ordered by the Engineer or the New York State Department of Environmental Conservation, prior to the placement of the demarcation barrier across the project site. The site grading activities include, but are not limited to, filling in small low spots to provide positive drainage, removing small high spots, and excavating a drainage channel as shown on the Contract Drawings.

2. Unit of Measurement: The quantity to be paid for under this item shall be based on the actual number of square yards of area graded as directed by Engineer or the New York State Department of Environmental Conservation.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to establish the grades shown on the Contract Drawings, as specified herein, and as ordered by Engineer. Grading of swales and drainage channels prior to installation of the capping system shall be included under this item.

JJ. Item No. 36 – Install Demarcation Barrier

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install a non-woven geotextile fabric to serve as a demarcation barrier as shown on the Drawings and meeting the requirements of Section "Geotextile Fabric-Demarcation Barrier." This item includes all pre-construction submittals, provision, deployment and seaming of materials, conformance testing of materials, and preparation and submittal to the Engineer of all documentation required under this Contract.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual surface area, measured in square yards, of geotextile fabric installed and documented. Measurement will not be made for waste or scrap material, or materials used for seams, repairs or overlaps.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the demarcation barrier where identified in the Contract Drawings.

KK. Item No. 37 – Install Barrier Protection Soil Cover Layer

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install the Barrier Protection Soil meeting the requirements of Section "Soil Cover Layer," placed in accordance with the Contract Documents. Includes all material prequalification testing, all field QA/QC testing required by Contract Specifications, and submission of all test results to Engineer.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of cubic yards in place determined from actual field measurements completed by

Engineer after compaction is accepted by Engineer, using a maximum thickness of twelve (12) inches.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install Barrier Protection Soil Cover Layer.

LL. Item No. 38 – Mulch Barrier Protection Soil Layer

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to place straw mulching on the surface of the Barrier Protection Soil Cover Layer to provide temporary soil erosion control until the developer takes over control of the site.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of acres mulched.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to mulch the Barrier Protection Soil Cover Layer.

MM. Item No. 39 – Dewatering & Groundwater Management

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to dewater the excavations as ordered by the Engineer or the New York State Department of Environmental Conservation. This item includes, but is not limited to the installation of pumps, pipes, hoses, water level control floats, and other appurtenances, erosion control devices necessary to dewater the work area. This item also includes providing temporary storage tanks for the water to facilitate settling of solids to a maximum turbidity of 50 NTUs, treating the water via activated carbon prior to discharge, coordinating the discharge time with the City of Poughkeepsie, and cleaning and removing all sediment from the tanks and disposing of these sediments off-site at a properly permitted facility. A flow meter shall be included on the discharge to measure the quantity of water treated and discharged.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of gallons of water pumped and treated.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to dewater excavations as directed, provide temporary holding and treatment of the collected water, and disposing of all collected sediment at a properly permitted, off-site facility.

NN. Item No. 40 – Free Product Removal & Disposal

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to remove free product encountered during the course of the excavations in the areas of concern. This item includes, but is not limited to, the installation of intrinsically safe pumps, pipes, hoses, and other associated pumping equipment to remove the free product, providing temporary holding vessels to contain the product, and off-site disposal of the material and a properly permitted facility. Time to organize and submit all disposal records to the Engineer shall be included under this item. This item also includes providing absorbent materials and containment booms necessary to isolate the free product.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of gallons of free product removed from the excavations and disposed of off-site.

3. Payment: Full compensation for work performed and as directed by Engineer or the New York State Department of Environmental Conservation. Removal of free product from the six (6)-inch diameter fuel oil pipeline or the existing underground storage tank on site will NOT be paid for under this item.

OO. Item No. 41 – Anchored Steel Sheet Pile Bulkhead (SSP)

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install anchored SSP bulkhead in accordance with the Contract Documents. This item includes all steel sheet piles anchor wall, bulkhead wale system, anchor wall wale system, tie rod assemblies, steel sheet pile coating, structural backfill, concrete cap and hardware necessary to complete the installation of the anchored SSP bulkhead in the location identified on the Contract Drawings.

2. Measurement: The quantity to be paid for under this item shall be based on the actual length, measured in lineal feet, of SSP installed, as shown on the Contract Drawings.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to install anchored SSP bulkhead.

PP. Item No. 42 – Cantilever Steel Sheet Pile Bulkhead (SSP)

1. Description: Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install cantilever SSP bulkhead in accordance with the Contract Documents. This item includes all steel sheet pile coating, structural backfill, concrete cap and hardware necessary to complete the installation of the cantilever SSP bulkhead in the location identified on the Contract Drawings

2. Measurement: The quantity to be paid for under this item shall be based on the actual length, measured in lineal feet, of SSP installed, as shown on the Contract Drawings.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to cantilever SSP bulkhead.

QQ. Item No. 43 – SSP Interlock Waterstop

1. Description: Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install SSP Interlock Waterstop in accordance with the Contract Documents.

2. Measurement: The quantity to be paid for under this item shall be based on the actual length of SSP interlock with the waterstop, measured in lineal feet, as shown on the Contract Drawings.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to install SSP interlock waterstop.

RR. Item No. 44 – SSP Toe Pins

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install steel toe pins in front of the SSP bulkhead in accordance with the Contract Drawings.

2. Measurement: The quantity to be paid for under this item shall be based on the actual number of SSP Toe Pins installed as shown on the Contract Drawings.

3. Payment: Full compensation for furnishing all labor, materials, tools and equipment necessary to install toe pins.

SS. Item No. 45 – Riprap Toe Protection

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install heavy stone fill meeting the requirements of Section "Riprap Shore Protection" in accordance with the Contract Documents. This item includes all Geotextile fabric, and bedding stone necessary to complete the installation of the Riprap Toe Protection as shown on the Contract Drawings.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of cubic yards in place determined from actual field measurements completed by Engineer using a maximum thickness of five (5) feet.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the heavy stone Riprap Toe Protection.

TT. Item No. 46 – Riprap Revetment

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install heavy stone fill meeting the requirements of Section "Riprap" in accordance with the Contract Documents. This item includes all Geotextile fabric, bedding stone, and concrete barrier necessary to complete the installation of the Riprap Revetment as shown on the Contract Drawings.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of cubic yards in place determined from actual field measurements completed by Engineer using a maximum thickness of (five) 5 feet.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the heavy stone riprap revetment.

UU. Item No. 47 – Outfall Extension Pipe for Existing Pipes

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install outfall extension pipes in accordance with the Contract Documents. This item includes all outfall extensions through the SSP bulkhead, Riprap Revetment and construction of a headwall as shown on the Contract Drawings.

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of outfall extensions done.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the outfall pipe extension.

VV. Item No. 48 – Live Stakes

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to install live stakes meeting the requirements of Section "Live Stakes" in accordance with the Contract Documents.

2. Measurement: Lump Sum not to exceed the bid price.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to install the stabilized construction entrance as shown on the Contract Drawings, as specified herein, and as ordered by Engineer.

WW. Item No. 49 – Additional Soil & Groundwater Sampling

1. Description: Includes all labor, materials, tools, equipment, supervision, testing and analytical services, and incidentals required to provide soil and groundwater testing of construction materials which is specifically requested by the Engineer above and beyond the standard testing rates defined in the Contract Specifications. This item does NOT includes performance testing, QA/QC testing, or submittal of test results to Engineer required elsewhere in the Contract Documents. This item includes, but is not limited to, the collection, preservation, and packaging of the samples, delivery of the samples to the laboratory for analysis, the laboratory analysis costs, and submittal of the analytical results to the Engineer.

2. Measurement: Labor, materials, tools, equipment, supervision, and services necessary to collect additional soil and groundwater samples, accompanied by appropriate documentation.

3. Payment: Cash allowance in accordance with Article 11 of the General Conditions. Full compensation for work performed and as directed by Engineer. QA/QC testing and other frequency testing required under the Contract Specifications will NOT be compensated for under this item.

XX. Item 50 – Alternate 1: Topsoil & Seeding

1. Description: Includes all labor, materials, tools, equipment, supervision, and incidentals required to reduce the thickness of the Barrier Protection Soil Cover Layer from twelve (12) inches to six (6) inches. As an alternate, this item includes the installation of six (6) inches of topsoil over a six (6)-inch thick Soil Cover Layer in accordance with Section "Topsoil" and establishing vegetation across the project site in accordance with Section "Seeding."

2. Measurement: The quantity to be paid for under this item shall be based upon the actual number of acres of topsoil placed (6 inches thick) and seeded/mulched.

3. Payment: Full compensation for furnishing all labor, materials, tools, and equipment necessary to place the topsoil and establish vegetation on the site. Payment for this item shall be paid in phases, as follows:

   a. Ninety (90) percent of the bid price will be paid for placing the topsoil, seeding, fertilizing and mulching site surface.
   b. Ten (10) percent of the bid price will be paid after a healthy stand of grass has been established for a period of no less than thirty (30) days and no significant erosion has occurred.

END OF SECTION 01270

SECTION 01290 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:

a. Contractor's progress schedule.
b. Application for Payment form.
c. List of subcontractors.
d. Schedule of allowances.
e. Schedule of alternates.
f. List of products.
g. List of principal suppliers and fabricators.
h. Schedule of submittals.

2. Submit the Schedule of Values to Engineer at earliest possible date but no later than 21 days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section or Unit Price item.

1. Identification: Include the following Project identification on the Schedule of Values:

a. Project name and location.
b. Name of Engineer.
c. Project number.
d. Contractor's name and address.
e. Date of submittal.

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

   a. Generic Name
   b. Related Specification Section or Division.
   c. Description of the Work.
   d. Name of subcontractor.
   e. Name of manufacturer or fabricator.
   f. Name of supplier.
   g. Change Orders (numbers) that affect value.
   h. Dollar value.

      1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.

4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

   a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.

6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

7. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.

8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: All payment applications shall cover no more than a one month period of time and shall be submitted to the Engineer for review and approval on the 2nd Wednesday of every month. The application will then be submitted to the City of Poughkeepsie by the 3rd Wednesday of every month for review and approval of the City Finance Department.

C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets or EJCDC Document 1910-8-E as form for Applications for Payment.

D. Payment Application Forms: Use forms provided by Owner for Applications for Payment. Sample copies are included at end of this Section.

E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.

2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

F. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

1. Submit partial waivers on each item for amount requested, before deduction for retainage, on each item.

2. When an application shows completion of an item, submit final or full waivers.

3. Owner reserves the right to designate which entities involved in the Work must submit waivers.

4. Waiver Delays: Submit each Application for Payment with Contractor's waiver of mechanic's lien for construction period covered by the application.

a. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of Values.
3. Contractor's Construction Schedule (preliminary if not final).
4. Products list.
5. Schedule of unit prices.
6. Submittals Schedule (preliminary if not final).
7. List of Contractor's staff assignments.
8. List of Contractor's principal consultants.
9. Copies of building permits.
10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
11. Initial progress report.
12. Report of preconstruction conference.
13. Certificates of insurance and insurance policies.
14. Performance and payment bonds.
15. Data needed to acquire Owner's insurance.
16. Initial settlement survey and damage report if required.

I. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.

2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.

3. Updated final statement, accounting for final changes to the Contract Sum.

4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."

5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."

6. AIA Document G707, "Consent of Surety to Final Payment."

7. Evidence that claims have been settled.

8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

9. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01290

SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on the Project including, but not limited to, the following:

1. Coordination.
2. Submittals.
3. Administrative and supervisory personnel.
4. Project meetings.
5. General installation provisions.
6. Cleaning and protection.

1.3 COORDINATION

A. Coordination: Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of these Specifications that are dependent upon each other for proper installation, connection, and operation.

1. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, cooperate with scheduled construction activities in the sequence required to obtain the best results.

2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.

3. Make adequate provisions to accommodate items scheduled for later installation.

4. Coordinate construction activities with public and private utilities.

a. Notify "Underground Facilities Protective Organizations" (UFPO) a minimum of 48 hours prior to excavation or blasting.

b. Notify the Owner and Engineer of any utility locations encountered which conflict with the work. Coordinate with the Owner and Utility Company in the protection, removal, relocation or replacement of conflicting utility locations.

B. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Pre-installation conferences.
7. Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.4 SUBMITTALS

A. Coordination Drawings: Prepare and submit coordination Drawings where close and careful coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space availability necessitates maximum utilization of space for efficient installation of different components.

1. Show the interrelationship of components shown on separate Shop Drawings.
2. Indicate required installation sequences.
3. Comply with requirements contained in Section "Submittals Procedures."

B. Staff Names: Within 15 days of starting construction operations, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities (including health and safety responsibilities); list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.

2. All on-site personnel shall be certified and trained in accordance with 29 CFR 1910.120 (40-Hour Hazardous Waste Operations and Emergency Response training). A copy of the 40-hour training certificate and a current 8-hour annual refresher certificate shall be made available in the temporary field office.

1.5 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved (e.g. subcontractors, regulating agencies), and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within 3 days of the meeting.

B. Preconstruction Conference: Schedule a preconstruction conference and organizational meeting at the Project site or other convenient site prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, the Engineer, Engineer and their consultants; the New York State Department of Environmental Conservation, the Contractor and its superintendent; major subcontractors; manufacturers; suppliers and other concerned parties shall each be represented at the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect progress, including the following:

a. Tentative construction schedule.
b. Phasing.
c. Critical work sequencing.
d. Designation of responsible personnel.
e. Procedures for processing field decisions and Change Orders.
f. Procedures for processing Applications for Payment.
g. Distribution of the Contract Documents.
h. Submittal procedures.
i. Preparation of Record Documents.
j. Use of the premises.
k. Responsibility for temporary facilities and controls.
l. Parking availability.
m. Office, work, and storage areas.
n. Equipment deliveries and priorities.
o. Safety procedures.
p. First aid.
q. Security.
r. Progress cleaning.
s. Working hours.
t. Housekeeping.
u. Subcontractors.
v. Preliminary Schedule of Shop Drawings and Samples.
w. Minority Business Enterprise Goals.
x. Co-ordination with other contractors.
y. Insurance in Force.
z. Contractor's Schedule of Values.

C. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Engineer of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for the following:

   a. Contract Documents.
   b. Options.
   c. Related Change Orders.
   d. Purchases.
   e. Deliveries.
   f. Shop Drawings, Product Data and quality control Samples.
   g. Review of mockups.
   h. Possible conflicts.
   i. Compatibility problems.
   j. Time schedules.
   k. Weather limitations.
   l. Manufacturer's written recommendations.
   m. Warranty requirements.
   n. Compatibility of materials.
   o. Acceptability of substrates.
   p. Temporary facilities and controls.
   q. Space and access limitations.
   r. Governing regulations.
   s. Testing and inspecting requirements.
   t. Required performance results.
   u. Protection of construction and personnel.
   v. Safety.
   w. Recording requirements.

3. Record significant discussions and agreements and disagreements of each conference, along with the approved progress schedule. Distribute the record of the meeting to everyone concerned, promptly, including the Owner and Engineer.

4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Conduct progress meetings at the Project Site at regularly scheduled intervals, at a date and time that is acceptable to the Owner and Engineer. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of the Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of Project.

   a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.
2) Time.
3) Sequence of operations.
4) Status of submittals.
5) Deliveries.
6) Off-site fabrication.
7) Access.
8) Site utilization.
9) Temporary facilities and controls.
10) Work hours.
11) Hazards and risks.
12) Progress cleaning.
13) Quality and work standards.
14) Change Orders.
15) Documentation of information for payment requests.

3. Reporting: No later than 3 days after each progress meeting date, distribute copies of minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.

C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.

E. Recheck measurements and dimensions, before starting each installation.

F. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

G. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

H. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Engineer for final decision.

3.2 CLEANING AND PROTECTION

A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

B. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

C. Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading.
2. Excessive internal or external pressures.
3. Excessively high or low temperatures.
4. Thermal shock.
5. Excessively high or low humidity.
6. Air contamination or pollution.
7. Water or ice.
8. Solvents.
9. Chemicals.
10. Light.
11. Radiation.
12. Puncture.
13. Abrasion.
14. Heavy traffic.
15. Soiling, staining and corrosion.
16. Bacteria.
17. Rodent and insect infestation.
18. Combustion.
19. Electrical current.
20. High speed operation,
21. Improper lubrication,
22. Unusual wear or other misuse.
23. Contact between incompatible materials.
24. Destructive testing.
25. Misalignment.
26. Excessive weathering.
27. Unprotected storage.
28. Improper shipping or handling.
29. Theft.
30. Vandalism.

END OF SECTION 01310

SECTION 01320 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's Construction Schedule.
2. Submittals Schedule.
3. Daily construction reports.
4. Field condition reports.
5. Special reports.
6. Construction photographs.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.

2. Predecessor activity is an activity that must be completed before a given activity can be started.

B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

C. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall Project duration and contains no float.

D. Event: The starting or ending point of an activity.

E. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.

2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.

3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

F. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

G. Major Area: A story of construction, a separate building, or a similar significant construction element.

H. Milestone: A key or critical point in time for reference or measurement.

I. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

1.4 SUBMITTALS

A. Preliminary Construction Schedule: Submit two (2) printed copies; one a single sheet of reproducible media, and one a print.

B. Submittals Schedule: Submit three (3) copies of schedule. Arrange the following information in a tabular format:

1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Name of subcontractor.
5. Description of the Work covered.
6. Scheduled date for Engineer's final release or approval.

C. Contractor's Construction Schedule: Submit two (2) printed copies of initial schedule, one a reproducible print and one a blue- or black-line print, large enough to show entire schedule for entire construction period.

D. Daily Construction Reports: Submit two (2) copies at weekly intervals.

E. Field Condition Reports: Submit two (2) copies at time of discovery of differing conditions.

F. Special Reports: Submit two (2) copies at time of unusual event.

G. Construction Photographs: Submit required photographic documentation specified in Section 01322 "Photographic Documentation."

1.5 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.

2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.

2. Initial Submittal: Within 14 days of Notice to Proceed, include submittals required during the first 30 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.

3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."

B. Time Frame: Extend schedule from date established for the Notice to Proceed to the date of Final Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 30 days, unless specifically allowed by Engineer.

2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.

4. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Engineer's administrative procedures necessary for certification of Substantial Completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.

2. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 1 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.

3. Work Restrictions: Show the effect of the following items on the schedule:

   a. Coordination with existing construction.

   b. Coordination with planned developer construction (subsurface utility installation and topsoil removal)

   c. Uninterruptible services.

   d. Partial occupancy before Substantial Completion.

   e. Use of premises restrictions.

   f. Provisions for future construction.

   g. Seasonal variations.

   h. Environmental control.

4. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:.

   a. Subcontract awards.
   b. Submittals.
   c. Purchases.
   d. Sample testing.
   e. Deliveries.
   f. Installation.
   g. Tests and inspections.
   h. Adjusting.
   i. Startup and placement into final use and operation.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to the Notice to Proceed, Substantial Completion, and Final Completion.

F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

G. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time.

H. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within 14 calendar days of date established for the Notice to Proceed. Base schedule on whatever updating and feedback was received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in ten (10) percent increments within time bar.

2.4 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of visitors at site, including Owner and governing agencies
3. Approximate count of personnel at Project site.
4. List of large equipment/machinery on-site.
5. High and low temperatures and general weather conditions.
6. Accidents.
7. Meetings and significant decisions.
8. Unusual events (refer to special reports).
9. Stoppages, delays, shortages, and losses.
10. Monitoring readings and similar recording.
11. Emergency procedures.
12. Orders and requests of authorities having jurisdiction.
13. Change Orders received and implemented.
14. Work Change Directives received.
15. Service connected and disconnected.
16. Substantial Completions authorized.
17. Summary of work completed that day.

B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare a detailed report. Submit with a request for information on CSI Form 13.2A. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.5 SPECIAL REPORTS

A. General: Submit special reports directly to Owner and Engineer within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.

3. As the Work progresses, indicate actual completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Engineer, Owner, the New York State Department of Environmental Conservation, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.

2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01320

SECTION 01322 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final Completion construction photographs.

1.3 SUBMITTALS

A. Key Plan: Submit key plan with vantage points marked for location and direction of each photograph. Include the same label information as the corresponding set of photographs.

B. Construction Photographs: Submit two (2) prints of each photographic view within seven (7) days of taking photographs.

1. Format: 4-inch by 6-inch smooth-surface matte prints on single-weight commercial-grade stock, enclosed back to back in clear plastic sleeves that are punched for standard 3-ring binder.

2. Identification: On back of each print provide an applied label or rubber-stamped impression with the following information:

a. Name of Project.

b. Name and address of photographer.

c. Name of Engineer.

d. Name of Contractor.

e. Date photograph was taken.

f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

3. Digital Images: Submit a complete set of digital image electronic files with each submittal of prints. Identify electronic media with date photographs were taken. Submit images that have the same aspect ratio as the sensor, uncropped.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Photographic Film: Medium-format, 2-1/4 by 2-3/4 inches (60 by 70 mm).

B. Digital Images: Provide images in JPEG format, with minimum sensor size of 2.0 megapixels.

PART 3 - EXECUTION

3.1 PHOTOGRAPHS, GENERAL

A. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.

B. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available at all times for reference. Identify photographs the same as for those submitted to Engineer.

3.2 CONSTRUCTION PHOTOGRAPHS

A. Preconstruction Photographs: Before starting construction, take color photographs of Project site and surrounding properties from different vantage points, as directed by Engineer.

1. Take a minimum of four (4) photographs to show existing conditions adjacent to the property before starting the Work.

2. Take a minimum of four (4) photographs of existing buildings adjoining the property to accurately record the physical conditions at the start of construction.

B. Periodic Construction Photographs: Take a minimum of four (4) color photographs on a weekly basis to document construction progress. Photographer shall select vantage points to best show status of construction and progress since the last photographs were taken.

C. Engineer-Directed Construction Photographs: From time to time, the Engineer will instruct photographer about number and frequency of color photographs and general directions on vantage points. Photographer shall select actual vantage points and take photographs to best show the status of construction and progress since the last photographs were taken.

D. Final Completion Construction Photographs: Take a minimum of eight (8) color photographs after date of Substantial Completion for submission as Project Record Documents. The Engineer will direct photographer for desired vantage points.

1. Do not include date stamp.

END OF SECTION 01322

SECTION 01330 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Engineer's responsive action.

B. Informational Submittals: Written information that does not require Engineer's approval. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. General: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Engineer for Contractor's use in preparing submittals.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal.

1. Initial Review: Allow 21 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.

2. Concurrent Review: Where concurrent review of submittals by Engineer's consultants, Owner, or other parties is required, usually 28 days for initial review of each submittal. Submittals requiring concurrent review will include, but are not limited to the following:

   a. Section 02240 – Geotextile Fabric
   b. Section 02270 – Rip Rap Shore Protection
   c. Section 02375 – Steel Sheet Piles
   d. Section 03300 – Cast-In-Place Concrete
   e. Section 05110 – Waterfront Structural Steel
   f. Section 05500 – Metal Fabrications
   g. Section 09905 – Protective Coating

3. If intermediate submittal is necessary, process it in same manner as initial submittal.

4. Allow 15 days for processing each resubmittal.

5. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.

E. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.

2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.

3. Include the following information on label for processing and recording action taken:

   a. Project name.
   b. Date.
   c. Name and address of Engineer.
   d. Name and address of Contractor.
   e. Name and address of subcontractor.
   f. Name and address of supplier.
   g. Name of manufacturer.
   h. Unique identifier, including revision number.
   i. Number and title of appropriate Specification Section.
   j. Drawing number and detail references, as appropriate.
   k. Other necessary identification.

F. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.

G. Additional Copies: Unless additional copies are required for final submittal, and unless Engineer observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.

1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Engineer.

2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will disregard submittals received from sources other than Contractor.

1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.

2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.

3. Transmittal Form: A sample form is included at the end of this Section.

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Use only final submittals with mark indicating action taken by Engineer in connection with construction.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

1. Number of Copies: Submit 6 copies of each submittal, unless otherwise indicated. Engineer will return 2 copies. Mark up and retain one returned copy as a Project Record Document.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.

2. Mark each copy of each submittal to show which products and options are applicable.

3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Manufacturer's catalog cuts.
e. Mill reports.
f. Compliance with recognized trade association standards.
g. Compliance with recognized testing agency standards.
h. Notation of coordination requirements.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Include the following information, as applicable:

a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Shopwork manufacturing instructions.
f. Templates and patterns.
g. Schedules.
h. Design calculations.
i. Compliance with specified standards.
j. Notation of coordination requirements.
k. Notation of dimensions established by field measurement.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 42 inches (762 by 1067 mm).

D. Coordination Drawings: Comply with requirements in Division 1 Section "Project Management and Coordination."

E. Samples: Prepare physical units of materials or products, including the following:

1. Comply with requirements in Division 1 Section "Quality Requirements" for mockups.

2. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

3. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Engineer's sample where so indicated. Attach label on unexposed side that includes the following:

a. Generic description of Sample.
b. Product name or name of manufacturer.
c. Sample source.

F. Product Schedule or List: Prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product.

G. Delegated-Design Submittal: Comply with requirements in Division 1 Section "Quality Requirements."

H. Contractor's Construction Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for Construction Manager's action.

I. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation."

J. Application for Payment: Comply with requirements in Division 1 Section "Payment Procedures."

K. Schedule of Values: Comply with requirements in Division 1 Section "Payment Procedures."

L. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.

2. Number and title of related Specification Section(s) covered by subcontract.

3. Drawing number and detail references, as appropriate, covered by subcontract.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit 4 copies of each submittal, unless otherwise indicated. Engineer will not return copies.

2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

3. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements."

B. Contractor's Construction Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation."

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.

G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.

H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.

I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.

J. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.

K. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

L. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.

M. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

N. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures."

O. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

P. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:

1. Preparation of substrates.
2. Required substrate tolerances.
3. Sequence of installation or erection.
4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

Q. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Name, address, and telephone number of factory-authorized service representative making report.

2. Statement on condition of substrates and their acceptability for installation of product.

3. Statement that products at Project site comply with requirements.

4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.

5. Results of operational and other tests and a statement of whether observed performance complies with requirements.

6. Statement whether conditions, products, and installation will affect warranty.

7. Other required items indicated in individual Specification Sections.

R. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

S. Construction Photographs: Comply with requirements in Division 1 Section Photographic Documentation."

T. Material Safety Data Sheets: Submit information directly to Owner. If submitted to Engineer, Engineer will not review this information but will return it with no action taken.

2.3 CONTRACTOR'S PROJECT HEALTH & SAFETY PLAN

A. No later than the Pre-construction meeting, the Contractor shall submit to the Engineer a written Project Health & Safety Plan which states the Contractor's company policy relative to safety. The plan must also address specific health and safety concerns which are expected to be encountered on the project. As a minimum this plan shall include:

1. Listing of project and company safety officers

2. Specific company safety policies

3. Employee Safety Training Program

4. Administrative procedures to handle employee health & safety concerns

5. Procedures for insuring worker compliance with health and safety requirements.

6. Listings of emergency contacts and key personnel

7. Mapping of emergency route to the nearest hospital

8. Provisions for on-site safety meetings

9. Medical surveillance and safety training requirements for site workers

10. Hazard evaluation and controls

11. Air monitoring requirements and action levels

12. Personal protection equipment requirements

13. Site controls (e.g. work zones, site security, communications, etc.)

14. Decontamination procedures

15. Spill containment and cleanup procedures

16. Additional requirements (e.g. Hazard Communication, First Aid Procedures, Confined Space Entry, Hot Work Permit procedures, Lockout/Tagout procedures, etc.)

17. Material Safety Data Sheets for all materials on-site

18. Signature page for all on-site personnel working under the Plan

B. All on-site personnel shall be certified and trained in accordance with 29 CFR 1910.120 (40-Hour Hazardous Waste Operations and Emergency Response training). A copy of the 40-hour training certificate and a current 8-hour annual refresher certificate shall be kept available in the temporary field office.

C. The Contractor shall be responsible to insure that each Subcontractor employed on the project complies with the requirements of this section either by submitting a copy of the subcontractor's Project Health & Safety Plan or by submitting a letter from the Subcontractor stating that they will comply with the provisions of the Contractor's Project Health & Safety Plan.

D. Submission of the required Project Health & Safety Plan by the Contractor is primarily for information or record purposes and shall not be construed to imply approval by the Engineer or to relieve the Contractor from the responsibility to adequately protect the health & safety of all workers involved in the project.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ENGINEER'S ACTION

A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action. Engineer review will be to ensure the product and design concepts meet the requirements of the Contract Documents only.

B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. Final Unrestricted Release: Where submittals are marked "No Exceptions Taken," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.

2. Final-But-Restricted Release: When submittals are marked "Make Corrections Noted," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.

3. Returned for Resubmittal: When submittal is marked "Revise and Resubmit," "Rejected," or "Submit Specified Item," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.

   a. Do not permit submittals marked "Revise and Resubmit," "Rejected," or "Submit Specified Item" to be used at the Project site, or elsewhere where Work is in progress.

4. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required."

C. Informational Submittals: Engineer will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.

D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION 01330

SHOP DRAWING TRANSMITTAL

DATE RETURNED:		DATE SENT:		PAGE 1 of ____

TO/FROM: TEL. # (315) 471-2835 CLOUGH, HARBOUR & ASSOCIATES LLP 441 South Salina Street Syracuse, NY 13202 ATTN: SCOTT SMITH, P.E..	TO/FROM: TEL. # ( )

CHA PROJECT NO.14357
CONTRACT NO. 09-06-27
TITLE: THE DELAVAL PROPERTY - ENVIRONMENTAL RESTORATION PROGRAM PROJECT

SHOP DRAWING DATA: (TO BE FILLED IN BY CONTRACTOR)

TOPIC: _____

SPECIFICATION: _____

DO NOT MIX SUBMISSIONS FROM DIFFERENT SPEC DIVISIONS ON THIS FORM. FILL OUT NEW FORM EACH TIME!

FOR CHA'S RECEIVED STAMP.

THE ABOVE NAMED CONTRACTOR HAS EVALUATED EACH ITEM IDENTIFIED IN THIS TRANSMITTAL & CERTIFIES IT TO BE IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.

****THIS SUBMITTAL IS NOT BEING PRESENTED AS A SUBSTITUTION****

CERTIFIED BY: _____ TITLE: _____ DATE: _____

ID NUMBER	QUANTITY		DESCRIPTION OF ITEM(S) BEING SUBMITTED (Reference specification section and/or drawing number for each item being submitted)	ENGINEER'S REVIEW STATUS
	SENT	RETURN		

NET = NO EXCEPTIONS TAKEN **MCN** = MAKE CORRECTIONS NOTED **R&R** = REVISE AND RESUBMIT
REJ = REJECTED **SSI** = SUBMIT SPECIFIED ITEM **NR** = NOT REVIEWED
*RESUBMIT REQUIRED IF REVIEW STATUS IS R&R, REJ, SSI

CONTRACTOR'S COMMENTS:	Engineer's Comments:

(FOR ENGINEER's INTERNAL USE ONLY)

Forwarded To: _____ DUE BACK TO CONTRACTOR: _____
Reviewed By: _____ DATE SENT: _____
Returned to Contractor By: _____ DATE RETURNED: _____
(ENTER DATE ABOVE)

SHOP DRAWING TRANSMITTAL Continuation Sheet

DATE RETURNED:		DATE SENT:		PAGE 2 of ____

TO/FROM: TEL. # (315) 471-3920

CLOUGH, HARBOUR & ASSOCIATES LLP
441 South Salina Street
Syracuse, NY 13202
ATTN: SCOTT SMITH, P.E.

TO/FROM: TEL. # ( )

CHA PROJECT NO.14357
CONTRACT NO. 09-06-27
TITLE: THE DELAVAL PROPERTY - ENVIRONMENTAL RESTORATION PROGRAM PROJECT

SHOP DRAWING DATA: (TO BE FILLED IN BY CONTRACTOR)

TOPIC: _____

SPECIFICATION: _____

DO NOT MIX SUBMISSIONS FROM DIFFERENT SPEC DIVISIONS ON THIS FORM. FILL OUT NEW FORM EACH TIME!

INSTRUCTIONS

THIS FORM SHALL BE USED IF ADDITIONAL LINES ARE NEEDED BASED UPON NUMBER OF ITEMS BEING LISTED IN DESCRIPTION AREA. DO NOT USE THIS FORM FOR COVER LETTER/TRANSMITTAL.

ID NUMBER	QUANTITY		DESCRIPTION OF ITEM(S) BEING SUBMITTED (Reference specification section and/or drawing number for each item being submitted)	ENGINEER'S REVIEW STATUS
	SENT	RETURN		

NET = NO EXCEPTIONS TAKEN
MCN = MAKE CORRECTIONS NOTED
R&R = REVISE AND RESUBMIT
REJ = REJECTED
SSI = SUBMIT SPECIFIED ITEM
NR = NOT REVIEWED
*RESUBMIT REQUIRED IF REVIEW STATUS IS R&R, REJ, SSI

SECTION 01400 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Document requirements.

3. Requirements for Contractor to provide quality-control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Engineer.

C. Testing Agency: An independent entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.4 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written reports, that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Ambient conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

C. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

D. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that is similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and similar regulations governing the Work, nor interfere with local trade-union jurisdictional settlements and similar conventions.

G. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed. Each testing agency shall be authorized by the authorities having jurisdiction in the state in which the project is located.

H. Preconstruction Testing: Testing agency shall perform preconstruction testing for compliance with specified requirements for performance and test methods.

1. Contractor responsibilities include the following:

a. Provide test specimens and assemblies representative of proposed materials and construction. Provide sizes and configurations of assemblies to adequately demonstrate capability of product to comply with performance requirements.

b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.

c. Fabricate and install test assemblies using installers who will perform the same tasks for Project.

d. When testing is complete, remove assemblies; do not reuse materials on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Engineer, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.6 QUALITY CONTROL

A. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by authorities having jurisdiction.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

   a. Contractor shall not employ the same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

B. Special Tests and Inspections: Owner will engage a testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.

1. Testing agency will notify Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.

2. Testing agency will submit a certified written report of each test, inspection, and similar quality-control service to Engineer with copy to Contractor and to authorities having jurisdiction.

3. Testing agency will submit a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.

4. Testing agency will interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

5. Testing agency will retest and reinspect corrected work.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents. The Engineer reserves the right to require the Contractor to use a different laboratory or testing subcontractor for retesting and reinspections.

E. Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

2. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.

3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.

5. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.

2. Incidental labor and facilities necessary to facilitate tests and inspections.

3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.

4. Facilities for storage and field-curing of test samples.

5. Delivery of samples to testing agencies.

6. Preliminary design mix proposed for use for material mixes that require control by testing agency.

7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for commencement of the Work (i.e., Notice to Proceed).

1. Distribution: Distribute schedule to Owner, Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01400

SECTION 01420 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": The term "approved," when used in conjunction with Engineer's action on Contractor's submittals, applications, and requests, is limited to Engineer's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by Engineer, requested by Engineer, and similar phrases.

D. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on Drawings; or to other paragraphs or schedules in Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference.

E. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": The term "furnish" is used to mean supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": The term "install" is used to describe operations at Project site including unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

I. "Installer": An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction operation, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

J. The term "experienced," when used with the term "installer," means having successfully completed previous projects similar in size and scope to this Project; being familiar with the special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1. Trades: Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

2. Assignment of Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no choice or option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

   a. This requirement shall not be interpreted to conflict with enforcement of building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.

K. "Project site" is the space available to the Contractor for performing construction activities, either exclusively or in conjunction with others performing other work as part of Project. The extent of Project site is shown on the Drawings and may or may not be identical with the description of the land on which Project is to be built.

L. Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of the date of the Contract Documents, unless otherwise indicated.

C. Conflicting Requirements: Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Engineer for a decision before proceeding.

   1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to Engineer for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

   1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source and make them available on request.

E. Abbreviations and Names: Abbreviations and acronyms are frequently used in the Specifications and other Contract Documents to represent the name of a trade association, standards-developing organization, authorities having jurisdiction, or other entity in the context of referencing a standard or publication. The following abbreviations and acronyms, as referenced in the Contract Documents, mean the associated names. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association 900 19th St., NW, Suite 300 Washington, DC 20006 www.aluminum.org	(202) 862-5100
AABC	Associated Air Balance Council 1518 K St., NW, Suite 503 Washington, DC 20005 www.aabchq.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association 1827 Walden Office Sq., Suite 104 Schaumburg, IL 60173-4268 www.aamanet.org	(847) 303-5664
AAN	American Association of Nurserymen (See ANLA)	
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol St., NW, Suite 249 Washington, DC 20001 www.aashto.org	(202) 624-5800
AATCC	American Association of Textile Chemists and Colorists P.O. Box 12215 One Davis Dr. Research Triangle Park, NC 27709-2215 www.aatcc.org	(919) 549-8141
ABMA	American Bearing Manufacturers Association (Formerly: Anti-Friction Bearing Manufacturers Association) 1200 19th St., NW, Suite 300 Washington, DC 20036-2401 www.abma-dc.org	(202) 429-5155
ABMA	American Boiler Manufacturers Association 950 North Glebe Rd., Suite 160 Arlington, VA 22203-1824 www.abma.com	(703) 522-7350
ACI	American Concrete Institute P.O. Box 9094 Farmington Hills, MI 48333-9094 www.aci-int.org	(248) 848-3700
ACIL	ACIL: The Association of Independent Scientific, Engineering, and Testing Firms 1629 K St., NW, Suite 400 Washington, DC 20006 www.acil.org	(202) 887-5872
ACPA	American Concrete Pipe Association 222 West Las Colinas Blvd., Suite 641 Irving, TX 75039-5423 www.concrete-pipe.org	(972) 506-7216

ADC	Air Diffusion Council 104 South Michigan Ave., Suite 1500 Chicago, IL 60603	(312) 201-0101
AEIC	Association of Edison Illuminating Companies 600 N. 18th St. P.O. Box 2641 Birmingham, AL 35291-0992 www.aeic.org	(205) 250-2530
AFBMA	Anti-Friction Bearing Manufacturers Association (See ABMA)	
AFPA	American Forest and Paper Association (Formerly: National Forest Products Association) 1111 19th St., NW, Suite 800 Washington, DC 20036 www.afandpa.org	(800) 878-8878 (202) 463-2700
AGA	American Gas Association 1515 Wilson Blvd. Arlington, VA 22209 www.aga.com	(703) 841-8400
AHA	American Hardboard Association 1210 W. Northwest Hwy Palatine, IL 60067-1897	(847) 934-8800
AHAM	Association of Home Appliance Manufacturers 20 N. Wacker Dr., Suite 1231 Chicago, IL 60606 www.aham.org	(312) 984-5800
AI	Asphalt Institute P.O. Box 14052 Lexington, KY 40512-4052 www.asphaltinstitute.org	(606) 288-4960
AIA	The American Institute of Architects 1735 New York Ave., NW Washington, DC 20006-5292 www.aia.org	(202) 626-7300
AIA	American Insurance Association 1130 Connecticut Ave., NW, Suite 1000 Washington, DC 20036	(202) 828-7100
AIHA	American Industrial Hygiene Association 2700 Prosperity Ave., Suite 250 Fairfax, VA 22031 www.aiha.org	(703) 849-8888
AISC	American Institute of Steel Construction One East Wacker Dr., Suite 3100 Chicago, IL 60601-2001 www.aisc.web.com	(800) 644-2400 (312) 670-2400

AISI	American Iron and Steel Institute 1101 17th St., NW, Suite 1300 Washington, DC 20036-4700 www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction 7012 S. Revere Pkwy, Suite 140 Englewood, CO 80112 www.aitc-glulam.org	(303) 792-9559
ALA	American Laminators Association (See LMA)	
ALCA	Associated Landscape Contractors of America 150 Elden St., Suite 270 Herndon, VA 20170-4831 www.alca.org	(800) 395-2522 (703) 736-9666
ALI	Associated Laboratories, Inc. P.O. Box 152837 Dallas, TX 75315 www.assoc-labs.com	(214) 565-0593
ALSC	American Lumber Standards Committee P.O. Box 210 Germantown, MD 20875	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc. 30 W. University Dr. Arlington Heights, IL 60004-1893 www.amca.org	(847) 394-0150
ANLA	American Nursery and Landscape Association (Formerly: American Association of Nurserymen) 1250 Eye St., NW, Suite 500 Washington, DC 20005 www.anla.org	(202) 789-2900
ANSI	American National Standards Institute 11 West 42nd St., 13th Floor New York, NY 10036-8002 www.ansi.org	(888) 267-4783 (212) 642-4900
AOAC	AOAC International 481 N. Frederick Ave., Suite 500 Gaithersburg, MD 20877 www.aoac.org	(301) 924-7077
AOSA	Association of Official Seed Analysts P.O. Box 81152 Lincoln, NE 68501-1152 www.zianet.com/AOSA	(402) 476-3852

APA	APA-The Engineered Wood Association (Formerly: American Plywood Association) P.O. Box 11700 Tacoma, WA 98411-0700 www.apawood.org	(253) 565-6600
APA	Architectural Precast Association P.O. Box 08669 Fort Myers, FL 33908-0669 www.archprecast.org	(941) 454-6989
API	American Petroleum Institute 1220 L St., NW, Suite 900 Washington, DC 20005-8029 www.api.org	(202) 682-8000
ARI	Air-Conditioning and Refrigeration Institute 4301 Fairfax Dr., Suite 425 Arlington, VA 22203 www.ari.org	(703) 524-8800
ARMA	Asphalt Roofing Manufacturers Association Center Park 4041 Powder Mill Rd., Suite 404 Calverton, MD 20705 www.asphaltroofing.org	(301) 348-2002
ASA	Acoustical Society of America 500 Sunnyside Blvd. Woodbury, NY 11797 http://asa.aip.org	(516) 576-2360
ASC	Adhesive and Sealant Council 1627 K St., NW, Suite 1000 Washington, DC 20006-1707 www.ascouncil.org	(202) 452-1500
ASCA	Architectural Spray Coaters Association 895 Doncaster Dr. West Deptford, NJ 08066	(609) 848-6120
ASCE	American Society of Civil Engineers World Headquarters 1801 Alexander Graham Bell Dr. Reston, VA 20191-4400 www.asce.org	(800) 548-2723 (703) 295-6000
ASHES	American Society for Healthcare Environmental Services Division of the American Hospital Association One North Franklin, Suite 2700 Chicago, IL 60606	(312) 422-3860

ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329-2305 www.ashrae.org	(800) 527-4723 (404) 636-8400
ASLA	American Society of Landscape Architects 636 Eye St., NW Washington, DC 20001-3736 www.asla.org	(202) 898-2444
ASME	American Society of Mechanical Engineers 345 East 47th St. New York, NY 10017-2392 www.asme.org	(800) 843-2763 (212) 705-7722
ASPA	American Sod Producers Association (See TPI)	
ASPE	American Society of Plumbing Engineers 3617 Thousand Oaks Blvd., Suite 210 Westlake Village, CA 91362-3649	(805) 495-7120
ASQ	American Society for Quality 611 East Wisconsin Ave. Milwaukee, WI 53201-3005 www.asq.org	(800) 248-1946 (414) 272-8575
ASSE	American Society of Sanitary Engineering 28901 Clemens Rd. Westlake, OH 44145 www.asse-plumbing.org	(440) 835-3040
ASTM	American Society for Testing and Materials 100 Barr Harbor Dr. West Conshohocken, PA 19428-2959 www.astm.org	(610) 832-9500
ATIS	Alliance for Telecommunications Industry Solutions (Formerly: Exchange Carriers Standards Association) 1200 G St., NW, Suite 500 Washington, DC 20005 www.atis.org	(202) 628-6380
AWCI	Association of the Wall and Ceiling Industries--International 803 West Broad St., Suite 600 Falls Church, VA 22046 www.awci.org	(703) 534-8300
AWCMA	American Window Covering Manufacturers Association (See WCMA)	
AWI	Architectural Woodwork Institute 1952 Isaac Newton Sq. West Reston, VA 20190 www.awinet.org	(800) 449-8811 (703) 733-0600

AWPA	American Wood-Preservers' Association P.O. Box 5690 Granbury, TX 76049 www.awpa.com	(817) 326-6300
AWPB	American Wood Preservers' Bureau (This organization is now defunct.)	
AWS	American Welding Society 550 NW LeJeune Rd. Miami, FL 33126 www.amweld.org	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association 6666 W. Quincy Ave. Denver, CO 80235 www.awwa.org	(800) 926-7337 (303) 794-7711
BAC	Brick Association of the Carolinas (Formerly: Brick Association of North Carolina) P.O. Box 13290 Greensboro, NC 27415-3290 www.gobrick.com	(800) 622-7425 (336) 273-5566
BHMA	Builders Hardware Manufacturers Association 355 Lexington Ave., 17th Floor New York, NY 10017-6603	(212) 661-4261
BIA	Brick Industry Association 11490 Commerce Park Dr. Reston, VA 22091-1525 www.bia.org	(703) 620-0010
BIFMA	The Business and Institutional Furniture Manufacturer's Association International 2680 Horizon Dr., SE, Suite A1 Grand Rapids, MI 49546-7500 www.bifma.com	(616) 285-3963
CAGI	Compressed Air and Gas Institute c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/cagi	(216) 241-7333
CAUS	Color Association of the United States 409 W. 44th St. New York, NY 10036-4402	(212) 582-6884
CBMA	Certified Ballast Manufacturers Association 355 Lexington Ave., 17th Floor New York, NY 10017 www.certbal.org	(212) 661-4261

CCC	Carpet Cushion Council P.O. Box 546 Riverside, CT 06878-0546	(203) 637-1312
CDA	Copper Development Association Inc. 260 Madison Ave., 16th Floor New York, NY 10016-2401 www.copper.org	(800) 232-3282 (212) 251-7200
CFFA	Chemical Fabrics & Film Association, Inc. c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/cffa	(216) 241-7333
CGA	Compressed Gas Association 1725 Jefferson Davis Hwy, Suite 1004 Arlington, VA 22202-4102 www.cganet.com	(703) 412-0900
CGSB	Canadian General Standards Board Place du Portage Phase III, 6B1 11 Laurier St. Hull, Quebec K1A 0S5 CANADA www.pwgsc.gc.ca/cgsb Mailing Address: Canadian General Standards Board Sales Centre Ottawa K1A 1G6 CANADA	(819) 956-3500 (819) 956-0425
CISCA	Ceilings and Interior Systems Construction Association 1500 Lincoln Hwy, Suite 202 St. Charles, IL 60174 www.cisca.org	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute 5959 Shallowford Rd., Suite 419 Chattanooga, TN 37421 www.cispi.org	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute 9891 Broken Land Pkwy, Suite 300 Columbia, MD 21046 www.baileadership.com	(301) 596-2584
CPA	Composite Panel Association (Formerly: National Particleboard Association) 18928 Premiere Ct. Gaithersburg, MD 20879-1569 www.pbmdf.com	(301) 670-0604

CPPA	Corrugated Polyethylene Pipe Association 3621 Secor Rd., Suite 320 Toledo, OH 436046 www.cppa-info.org	(800) 510-2772 (419) 241-2221
CRI	Carpet and Rug Institute 310 S. Holiday Ave. Dalton, GA 30722-2048 www.carpet-rug.com	(800) 882-8846 (706) 278-3176
CRSI	Concrete Reinforcing Steel Institute 933 N. Plum Grove Rd. Schaumburg, IL 60173-4758 www.crsi.org	(847) 517-1200
CSSB	Cedar Shake and Shingle Bureau 515 116th Ave., NE, Suite 275 Bellevue, WA 98004-5294 www.cedarbureau.org	(206) 453-1323
CTI	Ceramic Tile Institute of America 12061 West Jefferson Blvd. Culver City, CA 90230-6219	(310) 574-7800
CTI	Cooling Tower Institute P.O. Box 73383 Houston, TX 77273 www.cti.org	(281) 583-4087
DASMA	Door and Access Systems Manufacturers Association, International (Formerly: National Association of Garage Door Manufacturers) c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/dasma	(216) 241-7333
DHI	Door and Hardware Institute (Formerly: National Builders Hardware Association) 14170 Newbrook Dr. Chantilly, VA 20151-2223 www.dhi.org	(703) 222-2010
DIPRA	Ductile Iron Pipe Research Association 245 Riverchase Pkwy East, Suite O Birmingham, AL 35244 www.dipra.org	(205) 402-8702
DLPA	Decorative Laminate Products Association (Dissolved in 1995 - Now part of KCMA.)	
ECSA	Exchange Carriers Standards Association (See ATIS)	

EIA	Electronic Industries Association 2500 Wilson Blvd. Arlington, VA 22201 www.eia.org	(703) 907-7500
EIMA	EIFS Industry Members Association 3000 Corporate Center Dr., Suite 270 Morrow, GA 30260-4116 www.eifsfacts.com	(800) 294-3462 (770) 968-7945
EJMA	Expansion Joint Manufacturers Association 25 N. Broadway Tarrytown, NY 10591-3201 www.ejma.org	(914) 332-0040
ETL	ETL Testing Laboratories, Inc. (Now part of ITS)	
FCI	Fluid Controls Institute c/o Thomas Associates, Inc 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/fci	(216) 241-7333
FCICA	Floor Covering Installation Contractors Association P.O. Box 948 Dalton, GA 30722-0948	(706) 226-5488
FGMA	Flat Glass Marketing Association (See GANA)	
FTI	Factory Tile Institute c/o Stark Ceramics P.O. Box 8880 Canton, OH 44711	(330) 488-1211
FM	Factory Mutual System 1151 Boston-Providence Tnpk. P.O. Box 9102 Norwood, MA 02062-9102 www.factorymutual.com	(781) 762-4300
GA	Gypsum Association 810 First St., NE, Suite 510 Washington, DC 20002 www.usg.com	(202) 289-5440
GANA	Glass Association of North America (Formerly: Flat Glass Marketing Association) 2945 Southwest Wanamaker Dr., Suite A Topeka, KS 66614 www.glasswebsite.com/gana	(913) 266-7013

GRI	Geosynthetic Research Institute 475 Kedron Ave. Folsom, PA 19033 www.drexel.edu/gri	(610) 522-8440
HEI	Heat Exchange Institute c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/hei	(216) 241-7333
HI	Hydraulic Institute 9 Sylvan Way Parsippany, NJ 07054-3802	(888) 786-7744 (973) 267-9700
HI	Hydronics Institute Division of Gas Appliance Manufacturers Association P.O. Box 218 35 Russo Pl. Berkeley Heights, NJ 07922 www.gamanet.org	(908) 464-8200
HMA	Hardwood Manufacturers Association (Formerly: Southern Hardwood Lumber Manufacturers Association) 400 Penn Center Blvd., Suite 530 Pittsburgh, PA 15235-5605 www.hardwood.org	(412) 829-0770
HPVA	Hardwood Plywood and Veneer Association 1825 Michael Farraday Dr. P.O. Box 2789 Reston, VA 22195-0789 www.hpva.org	(703) 435-2900
IAS	International Approval Services Division of Canadian Standards Association 8501 East Pleasant Valley Rd. Cleveland, OH 44131 www.iasapprovals.org	(216) 524-4990
IBD	Institute of Business Designers (Now part of IIDA)	
ICC	International Code Council 5203 Leesburg Pike #708 Falls Church, VA 22041 www.intlcode.org	(703) 931-4533
ICEA	Insulated Cable Engineers Association P.O. Box 440 South Yarmouth, MA 02664 www.icea.net	(508) 394-4424

IEC	International Electrotechnical Commission (Available from ANSI) 11 West 42nd St., 13th Floor New York, NY 10036-8002 www.ansi.org	(888) 267-4783 (212) 642-4900
IEEE	Institute of Electrical and Electronics Engineers 345 E. 47th St. New York, NY 10017-2394 www.ieee.org	(800) 678-4333 (212) 705-7900
IESNA	Illuminating Engineering Society of North America 120 Wall St., 17th Floor New York, NY 10005-4001 www.iesna.org	(212) 248-5000
IGCC	Insulating Glass Certification Council P.O. Box 9 Henderson Harbor, NY 13651	(315) 938-7444
IIDA	International Interior Design Association 341 Merchandise Mart Chicago, IL 60654-1104 www.iida.com	(800) 888-4432 (312) 467-1950
ILI	Indiana Limestone Institute of America Stone City Bank Building, Suite 400 Bedford, IN 47421 www.iliai.com	(812) 275-4426
IMSA	International Municipal Signal Association P.O. Box 539 165 E. Union St. Newark, NY 14513 www.imsasafety.org	(800) 723-4672 (315) 331-2182
INCE	Institute of Noise Control Engineering P.O. Box 3206, Arlington Branch Poughkeepsie, NY 12603 www.ince.org	(914) 462-4006
IRI	HSB Industrial Risk Insurers P.O. Box 5010 85 Woodland St. Hartford, CT 06102-5010 www.industrialrisk.com	(800) 520-7300 (860) 520-7300
ISA	ISA - International Society for Measurement and Control P.O. Box 12277 67 Alexander Dr. Research Triangle Park, NC 27709 www.isa.org	(919) 549-8411

ISEA	Industrial Safety Equipment Association 1901 N. Moore St., Suite 808 Arlington, VA 22209 www.safetycentral.org/isea	(703) 525-1695
ISS	Iron and Steel Society 410 Commonwealth Dr. Warrendale, PA 15086-7512 www.issource.org	(412) 776-1535
ISWA	Insect Screening Weavers Association P.O. Box 1018 Ossining, NY 10562	(914) 962-9052
ITS	Intertek Testing Services (Formerly: Inchcape Testing Services) P.O. Box 2040 3933 US Route 11 Cortland, NY 13045-7902 www.itsglobal.com	(800) 345-3851 (607) 753-6711
KCMA	Kitchen Cabinet Manufacturers Association (Formerly: National Kitchen Cabinet Association) 1899 Preston White Dr. Reston, VA 22191 www.kema.org	(703) 264-1690
LGSI	Light Gage Structural Institute P.O. Box 560746 The Colony, TX 75056	(972) 625-4560
LIA	Lead Industries Association, Inc. 295 Madison Ave., Suite 808 New York, NY 10017 www.leadinfo.com	(800) 422-5323 (212) 578-4750
LMA	Laminating Materials Association (Formerly: American Laminators Association) 116 Lawrence St. Hillsdale, NJ 07642-2730 www.lma.org	(201) 664-2700
LPI	Lightning Protection Institute 3335 N. Arlington Heights Rd., Suite E Arlington Heights, IL 60004-7700 www.lightning.org	(800) 488-6864 (847) 577-7200
MBMA	Metal Building Manufacturers Association c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/mbma	(216) 241-7333

MCAA	Mechanical Contractors Association of America 1385 Piccard Dr. Rockville, MD 20850-4329 www.mcaa.org	(301) 869-5800
MFMA	Maple Flooring Manufacturers Association (Formerly: Wood and Synthetic Flooring Institute) 60 Revere Dr., Suite 500 Northbrook, IL 60062 www.maplefloor.com	(847) 480-9138
MFMA	Metal Framing Manufacturers Association 401 N. Michigan Ave. Chicago, IL 60611	(312) 644-6610
MHIA	Material Handling Industry Association 8720 Red Oak Blvd., Suite 201 Charlotte, NC 28217-3957 www.mhia.org	(800) 345-1815 (704) 676-1190
MIA	Marble Institute of America 30 Eden Alley, Suite 301 Columbus, OH 43215 www.marble-institute.com	(614) 228-6194
MIA	Masonry Institute of America 2550 Beverly Blvd. Los Angeles, CA 90057 www.masonryinstitute.org	(213) 388-0472
ML/SFA	Metal Lath/Steel Framing Association 8 South Michigan Ave., Suite 1000 Chicago, IL 60603	(312) 456-5590
MRCA	Midwest Roofing Contractors Association 4840 W. 15th St., Suite 1000 Lawrence, KS 66049 www.mrca.org	(913) 843-4888
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry 127 Park St., NE Vienna, VA 22180-4602 www.mss-hq.com	(703) 281-6613
NAA	National Arborist Association P.O. Box 1094 Amherst, NH 03031-1094 www.natlarb.com	(800) 733-2622 (603) 673-3311
NAAMM	National Association of Architectural Metal Manufacturers 8 South Michigan Ave., Suite 1000 Chicago, IL 60603 www.gss.net/naamm	(312) 322-0405

NAAMM	North American Association of Mirror Manufacturers (See GANA) 2945 Southwest Wanamaker Dr., Suite A Topeka, KS 66614 www.glasswebsite.com/naamm	(913) 266-7013
NACE	NACE International (Formerly: National Association of Corrosion Engineers) P.O. Box 218340 Houston, TX 77218-8340	(281) 492-0535 (281) 492-8254
NAGDM	National Association of Garage Door Manufacturers (See DASMA)	
NAIMA	North American Insulation Manufacturers Association (Formerly: Thermal Insulation Manufacturers Association) 44 Canal Center Plaza, Suite 310 Alexandria, VA 22314 www.naima.org	(703) 684-0084
NAMI	National Accreditation & Management Institute, Inc. P.O. Box 366 207 S. Washington St. Berkeley Springs, WV 25411	(304) 258-5100
NAPA	National Asphalt Pavement Association NAPA Building 5100 Forbes Blvd. Lanham, MD 20706-4413 www.hotmix.org	(888) 468-6499 (301) 731-4748
NAPM	National Association of Photographic Manufacturers 550 Mamaroneck Ave. Harrison, NY 10528	(914) 698-7603
NBHA	National Builders Hardware Association (See DHI)	
NBGQA	National Building Granite Quarries Association, Inc. 1220 L. St., NW, Suite 100-167 Washington, DC 20005	(800) 557-2848
NCAC	National Council of Acoustical Consultants 66 Morris Ave., Suite 1A Springfield, NJ 07081 www.ncac.com	(973) 564-5859
NCCA	National Coil Coaters Association 401 N. Michigan Ave. Chicago, IL 60611 www.coilcoaters.org	(312) 321-6894
NCMA	National Concrete Masonry Association 2302 Horse Pen Rd. Herndon, VA 20171-3499 www.ncma.org	(703) 713-1900

NCPI	National Clay Pipe Institute P.O. Box 759 253-80 Center St. Lake Geneva, WI 53147 www.ncpi.org	(414) 248-9094
NCRPM	National Council on Radiation Protection and Measurements 7910 Woodmont Ave., Suite 800 Bethesda, MD 20814-3095 www.ncrp.com	(800) 229-2652 (301) 657-2652
NCSPA	National Corrugated Steel Pipe Association 1255 23rd St., NW, Suite 850 Washington, DC 20037 www.ncspa.org	(202) 452-1700
NEBB	Natural Environmental Balancing Bureau 8575 Grovemont Circle Gaithersburg, MD 20877-4121 www.mcaa.org/nebb.htm www.nebb.org	(301) 977-3698
NECA	National Electrical Contractors Association 3 Bethesda Metro Center, Suite 1100 Bethesda, MD 20814-3299 www.necanet.org	(301) 657-3110
NEI	National Elevator Industry 185 Bridge Plaza North, Suite 310 Fort Lee, NJ 07024	(201) 944-3211
NELMA	Northeastern Lumber Manufacturers Association 272 Tuttle Rd. P.O. Box 87A Cumberland Center, ME 04021 www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association 1300 N 17th St., Suite 1847 Rosslyn, VA 22209 www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association P.O. Box 687 106 Stone St. Morrison, CO 80465-1526 www.electricnet.com/neta	(303) 697-8441
NFPA	National Fire Protection Association One Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101 www.nfpa.org	(800) 344-3555 (617) 770-3000

NFPA	National Forest Products Association (See AFPA)	
NFRC	National Fenestration Rating Council Incorporated 1300 Spring St., Suite 500 Silver Spring, MD 20910 www.nfrc.org	(301) 589-6372
NGA	National Glass Association 8200 Greensboro Drive, 3rd Floor McLean, VA 22102-3881	(703) 442-4890
NHLA	National Hardwood Lumber Association P.O. Box 34518 Memphis, TN 38184-0518 www.natlhardwood.org	(901) 377-1818
NIA	National Insulation Association (Formerly: National Insulation and Abatement Contractors Association) 99 Canal Center Plaza, Suite 222 Alexandria, VA 22314 www.insulation.org	(703) 683-6422
NIAC	National Insulation and Abatement Contractors Association (See NIA)	
NKCA	National Kitchen Cabinet Association (See KCMA)	
NLGA	National Lumber Grades Authority #406-First Capital Pl. 960 Quayside Dr. New Westminster, BC V3M 6G2 CANADA	(604) 524-2393
NOFMA	National Oak Flooring Manufacturers Association P.O. Box 3009 Memphis, TN 38173-0009 www.nofma.org	(901) 526-5016
NPA	National Parking Association 1112 16th Street, NW, Suite 300 Washington, DC 20036	(202) 296-4336 (800) 647-7275
NPCA	National Paint and Coatings Association 1500 Rhode Island Ave., NW Washington, DC 20005-5597 www.paint.org	(202) 462-6272
NRCA	National Roofing Contractors Association O'Hare International Center 10255 W. Higgins Rd., Suite 600 Rosemont, IL 60018-5607 www.roofonline.org	(800) 323-9545 (847) 299-9070

NRMCA	National Ready Mixed Concrete Association 900 Spring St. Silver Spring, MD 20910 www.nrmca.org	(301) 587-1400
NSA	National Stone Association 1415 Elliot Pl., NW Washington, DC 20007 www.aggregates.org	(800) 342-1415 (202) 342-1100
NSF	NSF International (Formerly: National Sanitation Foundation) 3475 Plymouth Rd. Ann Arbor, MI 48105 www.nsf.org	(734) 769-8010
NSSEA	National School Supply and Equipment Association 8300 Colesville Rd., Suite 250 Silver Spring, MD 20910 www.nssea.org	(800) 395-5550 (301) 495-0240
NTMA	National Terrazzo and Mosaic Association 110 E. Market St., Suite 200-A Leesburg, VA 20176-3122 www.ntma.com	(800) 323-9736 (703) 779-1022
NUSIG	National Uniform Seismic Installation Guidelines P.O. Box 0933 Alamo, CA 94507	(925) 555-6331
NWMA	National Woodwork Manufacturers Association (See NWWDA)	
NWWDA	National Wood Window and Door Association (Formerly: National Woodwork Manufacturers Association) 1400 E. Touhy Ave. Des Plaines, IL 60018 www.nwwda.org	(800) 223-2301 (847) 299-5200
PATMI	Powder Actuated Tool Manufacturers' Institute 1603 Boonslick Rd. St. Charles, MO 63301-2244	(314) 947-6610
PCA	Portland Cement Association 5420 Old Orchard Rd. Skokie, IL 60077-1083 www.portcement.org	(847) 966-6200
PCI	Precast/Prestressed Concrete Institute 175 W. Jackson Blvd. Chicago, IL 60604 www.pci.org	(312) 786-0300

PDCA	Painting and Decorating Contractors of America 3913 Old Lee Hwy, Suite 33-B Fairfax, VA 22030 www.pdca.com	(800) 332-7322 (703) 359-0826
PDI	Plumbing and Drainage Institute 45 Bristol Dr., Suite 101 South Easton, MA 02375 //pdi-online.org	(800) 589-8956 (508) 230-3516
PEI	Porcelain Enamel Institute 4004 Hillsboro Pike, Suite 224-B Nashville, TN 37215 www.porcelainenamel.com	(615) 385-5357
PGI	PVC Geomembrane Institute/Technology Program University of Illinois-Urbana Champaign 205 N. Mathews Ave. 2215 Newmark Civil Engineering Lab Urbana, IL 61801 //pgi-tp.ce.vivc.edu	(217) 333-3929
PIMA	Photographic and Imaging Manufacturers Association 550 Mamaroneck Ave., Suite 307 Harrison, NY 10528 www.pima.net	(914) 698-7603
PPFA	Plastic Pipe and Fittings Association 800 Roosevelt Rd., Building C, Suite 20 Glen Ellyn, IL 60137-5833	(888) 314-6774 (630) 858-6540
PPI	Plastics Pipe Institute (The Society of the Plastics Industry, Inc.) 1801 K St., NW, Suite 600K Washington, DC 20006 www.plasticpipe.org	(202) 974-5306
RCMA	Roof Coatings Manufacturers Association Center Park 4041 Powder Mill Rd., Suite 404 Calverton, MD 20705 www.roofcoatings.org	(301) 348-2003
RCSC	Research Council on Structural Connections Sargent & Lundy 55 E. Monroe St. Chicago, IL 60603	(312) 269-2424
RFCI	Resilient Floor Covering Institute 966 Hungerford Dr., Suite 12-B Rockville, MD 20850-1714	(301) 340-8580
RMA	Rubber Manufacturers Association 1400 K St., NW, Suite 900 Washington, DC 20005 www.rma.org	(800) 220-7620 (202) 682-4800

SAE	SAE International 400 Commonwealth Dr. Warrendale, PA 15096-0001 For publications: Call (724) 776-4970 www.sae.org	(724) 776-4841
SDI	Steel Deck Institute P.O. Box 25 Fox River Grove, IL 60021 www.sdi.org	(847) 462-1930
SDI	Steel Door Institute 30200 Detroit Rd. Cleveland, OH 44145-1967 www.steeldoor.org	(440) 899-0010
SEFA	Scientific Equipment and Furniture Association 7 Wildbird Lane Hilton Head Island, SC 29926 www.sefalabfurn.com	(843) 689-6878
SEGD	Society for Environmental Graphic Design 401 F St., NW, Suite 333 Washington, DC 20001-2728	(202) 638-5555
SGCC	Safety Glazing Certification Council P.O. Box 9 Henderson Harbor, NY 13651	(315) 938-7444
SHLMA	Southern Hardwood Lumber Manufacturers Association (See HMA)	
SIGMA	Sealed Insulating Glass Manufacturers Association 401 N. Michigan Ave. Chicago, IL 60611-4267 www.sigmaonline.org/sigma	(312) 644-6610 x3279
SJI	Steel Joist Institute 3127 10th Ave., North Ext. Myrtle Beach, SC 29577-6760	(803) 626-1995
SMA	Screen Manufacturers Association 2850 S. Ocean Blvd., Suite 114 Palm Beach, FL 33480-5535	(561) 533-0991
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association 4201 Lafayette Center Dr. P.O. Box 221230 Chantilly, VA 20151-1209 www.smacna.org	(703) 803-2980

SPI	The Society of the Plastics Industry, Inc. Spray Polyurethane Division 1801 K St., NW, Suite 600K Washington, DC 20006 www.socplas.org	(800) 951-2001 (202) 974-5200
SPIB	Southern Pine Inspection Bureau 4709 Scenic Hwy Pensacola, FL 32504-9094 www.spib.org	(850) 434-2611
SPRI	SPRI (Formerly: Single Ply Roofing Institute) 200 Reservoir St., Suite 309A Needham, MA 02494-3034 www.spri.org	(781) 444-0242
SSINA	Specialty Steel Industry of North America c/o Collier, Shannon Rill & Scott 3050 K St., NW, Suite 400 Washington, DC 20007 www.ssina.com	(800) 982-0355 (202) 342-8630
SSPC	SSPC: The Society for Protective Coatings 40 24th St., 6th Floor Pittsburgh, PA 15222-4656 www.sspc.org	(800) 837-8303 (412) 281-2331
SSPMA	Sump and Sewage Pump Manufacturers Association P.O. Box 647 Northbrook, IL 60065-0647	(847) 559-9233
STI	Steel Tank Institute 570 Oakwood Rd. Lake Zurich, IL 60047-1559 www.steeltank.com	(847) 438-8265
SWI	Steel Window Institute c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/swi	(216) 241-7333
SWPA	Submersible Wastewater Pump Association 1806 Johns Dr. Glenview, IL 60025-1657	(847) 729-7972
SWRI	Sealant, Waterproofing and Restoration Institute 2841 Main St. Kansas City, MO 64108 www.swrionline.org	(816) 472-7974
TCA	Tile Council of America P.O. Box 1787 Clemson, SC 29633 www.tileusa.com	(864) 646-8453

TIMA	Thermal Insulation Manufacturers Association (See NAIMA)	
TPI	Truss Plate Institute 583 D'Onofrio Dr., Suite 200 Madison, WI 53719	(608) 833-5900
TPI	Turfgrass Producers International (Formerly: American Sod Producers Association) 1855-A Hicks Rd. Rolling Meadows, IL 60008 www.turfgrassod.org	(800) 405-8873 (847) 705-9898
UFAC	Upholstered Furniture Action Council P.O. Box 2436 High Point, NC 27261	(910) 885-6085
UL	Underwriters Laboratories Inc. 333 Pfingsten Rd. Northbrook, IL 60062 www.ul.com	(800) 704-4050 (847) 272-8800
UNI	Uni-Bell PVC Pipe Association 2655 Villa Creek Dr., Suite 155 Dallas, TX 75234 members.aol.com/unibell	(972) 243-3902
USITT	USITT: The American Association of Design and Production Professionals in the Performing Arts 6443 Ridings Rd. Syracuse, NY 13206-1111 www.culturenet.ca/usitt	(800) 938-7488 (315) 463-6463
USP	U.S. Pharmacopeia (Formerly: U.S. Pharmacopoeial Convention) 12601 Twinbrook Pkwy Rockville, MD 20852-1790 www.usp.org	(800) 227-8772 (301) 881-0666
WA	Wallcoverings Association 401 N. Michigan Ave. Chicago, IL 60611-4267	(312) 644-6610
WASTEC	Waste Equipment Technology Association 4301 Connecticut Ave. NW, Suite 300 Washington, DC 20008	(202) 244-4700
WCLIB	West Coast Lumber Inspection Bureau P.O. Box 23145 Portland, OR 97281-3145	(800) 283-1486 (503) 639-0651
WCMA	Window Covering Manufacturers Association (Formerly: American Window Covering Manufacturers Association) 355 Lexington Ave., 17th Floor New York, NY 10017-6603	(212) 661-4261

WEF	Water Environment Federation (Formerly: Water Pollution Control Federation) 601 Wythe St. Alexandria, VA 22314-1994 www.wef.org	(800) 666-0206 (703) 684-2400
WIC	Woodwork Institute of California P.O. Box 980247 West Sacramento, CA 95798-0247 www.wicnet.org	(916) 372-9943
WMMPA	Wood Moulding & Millwork Producers Association 507 First St. Woodland, CA 95695 www.wmmpa.com	(800) 550-7889 (530) 661-9591
WPCF	Water Pollution Control Federation (See WEF)	
WRI	Wire Reinforcement Institute 301 E. Sandusky St. Findlay, OH 45840 www.bright.net/~rreiter	(419) 425-9473
WSC	Water Systems Council Building C, Suite 20 800 Roosevelt Rd. Glen Ellyn, IL 60137	(630) 545-1762
WSFI	Wood and Synthetic Flooring Institute (See MFMA)	
WWPA	Western Wood Products Association Yeon Building 522 SW 5th Ave. Portland, OR 97204-2122 www.wwpa.org	(503) 224-3930

F. Federal Government Agencies: Names and titles of Federal Government standards or specification-developing agencies are often abbreviated. The following abbreviations and acronyms referenced in the Contract Documents indicate names of standards or specification-developing agencies of the Federal Government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

CE	Corps of Engineers (U.S. Department of the Army) 20 Massachusetts Ave., NW Washington, DC 20314 www.usace.army.mil CRD standards are available from: U.S. Army Corps of Engineers Waterways Experiment Station Technical Report Distribution Section Services Branch, TIC 3909 Halls Ferry Rd. Vicksburg, MS 39180-6199	(202) 761-0660 (601) 634-2696

CFR	Code of Federal Regulations (Available from the Government Printing Office) Washington, DC 20401 (Material is usually published first in the "Federal Register.") www.access.gpo.gov	(202) 512-1800
CPSC	Consumer Product Safety Commission East West Towers 4330 East-West Hwy Bethesda, MD 20814 www.cpcs.gov	(800) 638-2772 (301) 504-0990
CS	Commercial Standard (U.S. Department of Commerce) Government Printing Office Washington, DC 20402 For commercial standards, contact: Ms. Brenda Umberger CS & PS Specialist c/o NIST Gaithersburg, MD 20899 www.nist.gov	(202) 512-1800 (301) 975-4036
DOC	Department of Commerce 14th St. and Constitution Ave., NW Washington, DC 20230 www.doc.gov	(202) 482-2000
DOT	Department of Transportation 400 Seventh St., SW Washington, DC 20590 www.dot.gov	(202) 366-4000
EPA	Environmental Protection Agency 401 M St., SW Washington, DC 20460 www.epa.gov	(202) 260-2090
FAA	Federal Aviation Administration (U.S. Department of Transportation) 800 Independence Ave., SW Washington, DC 20591 www.faa.gov	(202) 366-4000
FCC	Federal Communications Commission 1919 M St., NW Washington, DC 20554 www.fcc.gov	(202) 418-0126
FDA	Food and Drug Administration 5600 Fishers Lane Rockville, MD 20857 www.fda.gov	(301) 443-1544

FHA	Federal Housing Administration (U.S. Department of Housing and Urban Development) 451 Seventh St., SW Washington, DC 20410 www.hud.gov	(202) 401-0388
FS	Federal Specification Unit (Available from GSA) 470 East L'Enfant Plaza, SW, Suite 8100 Washington, DC 20407 www.gsa.gov	(202) 619-8925
GSA	General Services Administration F St. and 18th St., NW Washington, DC 20405 www.gsa.gov	(202) 708-5082
MIL	Military Standardization Documents (U.S. Department of Defense) Defense Automated Printing Service 700 Robbins Ave., Building 4D Philadelphia, PA 19111 www.dodssp.daps.mil	(215) 697-2179
NIST	National Institute of Standards and Technology (U.S. Department of Commerce) Building 101, #A1134, Rte. I-270 and Quince Orchard Rd. Gaithersburg, MD 20899 www.nist.gov	(301) 975-2000
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor) 200 Constitution Ave., NW Washington, DC 20210 www.osha.gov	(202) 219-8148
PS	Product Standard of NBS (U.S. Department of Commerce) Government Printing Office Washington, DC 20402 For product standards, contact: Ms. Brenda Umberger CS & PS Specialist c/o NIST Gaithersburg, MD 20899 www.nist.gov	(202) 512-1800 (301) 975-4036
RUS	Rural Utilities Service (Formerly: Rural Electrification Administration) (U.S. Department of Agriculture) 14th St. and Independence Ave., SW Washington, DC 20250	(202) 692-0187

TRB	Transportation Research Board, National Research Council 2101 Constitution Ave., NW Washington, DC 20418 www.nas.edu/trb	(202) 334-2934
USDA	U.S. Department of Agriculture 14th St. and Independence Ave., SW Washington, DC 20250 www.usda.gov	(202) 720-8732
USPS	U.S. Postal Service 475 L'Enfant Plaza, SW Washington, DC 20260-0010 www.usps.gov	(202) 268-2000

G. State Government Agencies: The following state government agencies develop standards referenced in the Contract Documents:

California		
CBHF	State of California, Department of Consumer Affairs Bureau of Home Furnishings and Thermal Insulation Technical Information 3485 Orange Grove Ave. North Highland, CA 95660-5595	(196) 574-2041 (800) 952-5210
New York		
NYSDOT	New York State Department of Transportation 50 Wolf Road Albany, New York 12232	(518) 457-4092
Texas		
TFS	Texas Forest Service Forest Products Laboratory Highway 59S. P.O. Box 310 Lufkin, TX 75902-0310	(409) 639-8180

1.4 QUALITY ASSURANCE

A. Regulatory Requirements

1. The Engineer has contacted authorities having jurisdiction where necessary to obtain information necessary for preparation of Contract Documents. Contact authorities having jurisdiction directly for information and decisions having a bearing on the Work.

1.5 SUBMITTALS

A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established for compliance with standards and regulations bearing upon performance of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01420

SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for temporary services, facilities and controls, including temporary utilities, support facilities, and security and protection facilities.

B. Temporary utilities include, but are not limited to, the following:

1. Electric power and light service
2. Telephone service

C. Temporary construction and support facilities include, but are not limited to, the following:

1. Temporary roads and paving.
2. Dewatering facilities and drains.
3. Project identification and temporary signs.
4. Waste disposal facilities.
5. Field offices and storage sheds.
6. Sanitary facilities, including toilets, wash facilities, and drinking water facilities
7. Temporary heating and cooling.
8. Construction aids and miscellaneous services and facilities.

D. Security and protection facilities include, but are not limited to, the following:

1. Environmental protection.
2. Stormwater control.
3. Tree and plant protection.
4. Pest control.
5. Site enclosure fence and lockup.
6. Barricades, warning signs, and lights.
7. Fire protection.

1.3 USE CHARGES

A. General: The cost of all use charges for temporary facilities are not chargeable to Owner or Engineer and shall be included in the Contract Sum. The contractor shall be responsible for paying all use charges until the project is substantially complete. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:

1. Owner's construction forces.

2. Occupants of Project.

3. Engineer.

4. New York State Department of Environmental Conservation and other governmental agencies.

5. Testing agencies.

6. Personnel of authorities having jurisdiction.

B. Water Service: Pay water service use charges, whether metered or otherwise, for water used by all entities engaged in construction activities at Project site.

C. Electric Power Service: Pay electric power service use charges, whether metered or otherwise, for electricity used by all entities engaged in construction activities at Project site.

1.4 SUBMITTALS

A. Temporary Utility Reports: Submit reports of tests, inspections, utility billings, and similar procedures performed on temporary utilities.

B. Implementation and Termination Schedule: Within 15 days of date established for submittal of Contractor's Construction Schedule, submit a schedule indicating implementation and termination of each temporary utility.

1.5 QUALITY ASSURANCE

A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.

1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.

2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

3. Refer to Guidelines for Bid Conditions for Temporary Job Utilities and Services, prepared jointly by AGC and ASC, for industry recommendations.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:

1. Building Code requirements.
2. Health and safety regulations.
3. Utility company regulations.
4. Police, Fire Department and Rescue Squad rules.

1.6 PROJECT CONDITIONS

A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service. Prepare a schedule indicating date for implementation and terminations of each temporary facility.

1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:

1. Keep temporary services and facilities clean and neat.

2. Relocate temporary services and facilities as required by progress of the Work.

3. Operate in a safe and efficient manner.

4. Take necessary fire prevention measures.

5. Dot not overload facilities or permit them to interfere with progress.

6. Do not allow hazardous, dangerous or unsanitary conditions or public nuisances to develop or persist on the site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Engineer. Provide materials suitable for use intended.

B. Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts with 1-5/8-inch-OD top rails.

C. Portable Chain-Link Fencing: Minimum 2-inch 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide galvanized steel bases for supporting posts.

D. Water: Provide potable water approved by local health authorities

2.2 EQUIPMENT

A. General: Provide new equipment; if acceptable to the Engineer, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.

B. Field Offices: Provide mobile unit field office in accordance with Section 1520 – "Engineers Field Office."

C. Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A fire extinguishers for temporary offices and similar spaces. In other locations provide hand-carried, portable, UL-rated, class "ABC dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.

1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

D. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

E. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.

1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7.2 to 12.7 deg C).

F. Heating Equipment: Unless Owner authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.

2. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.

G. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.

H. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

I. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.

J. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.

K. First Aid Supplies: Comply with governing regulations.

L. Storage and Fabrication Sheds: Install storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on the site.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

2. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.

3. Obtain easements to bring temporary utilities to Project site where Owner's easements cannot be used for that purpose.

B. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction until permanent water service is in use. Sterilize temporary water piping before use.

C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.

1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.

2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Provide separate facilities for male and female personnel.

3. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Dispose of drainage properly. Supply cleaning compounds appropriate for each type of material handled.

a. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.

4. Drinking-Water Fixtures: Install drinking-water fountains where indicated.

5. Drinking-Water Facilities: Provide bottled-water, drinking-water units.

a. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7.2 to 12.7 deg C).

D. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.

1. Install electric power service underground, unless overhead service must be used.

2. Install power distribution wiring overhead and rise vertically where least exposed to damage.

3. Connect temporary service to Owner's existing power source, as directed by electric company officials.

E. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.

F. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.

1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

2. Provide warning signs at power outlets other than 110 to 120 V.

3. Provide metal conduit, tubing, or metallic cable for wiring exposed to possible damage. Provide rigid steel conduits for wiring exposed on grades, floors, decks, or other traffic areas.

G. Telephone Service: Provide temporary telephone service throughout construction period for common-use facilities used by all personnel engaged in construction activities. Install separate telephone line for each field office and first-aid station.

1. At each telephone, post a list of important telephone numbers.

a. Police and fire departments.
b. Ambulance service.
c. Contractor's home office.
d. Engineer's office.
e. Owner's office.
f. Principal subcontractors' field and home offices.

2. Provide an answering machine on superintendent's telephone.

3. Provide a portable cellular telephone for superintendent's use in making and receiving telephone calls when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access.

2. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.

3. Maintain support facilities until near Final Completion.

B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate to support loads and to withstand exposure to traffic during construction period. Locate temporary roads and paved areas within construction limits indicated on Drawings.

1. Provide a reasonably level, graded, well-drained subgrade of satisfactory soil material, compacted to not less than 95 percent of maximum dry density in the top 6 inches.

2. Provide gravel paving course of subbase material not less than 3 inches thick; roller compacted to a level, smooth, dense surface.

3. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

C. Traffic Controls: Provide temporary traffic controls at junction of temporary roads with public roads. Include warning signs for public traffic and "STOP" signs for entrance onto public roads. Comply with requirements of authorities having jurisdiction.

D. Dewatering Facilities and Drains: Comply with requirements in applicable Division 2 Sections for temporary drainage and dewatering facilities and operations not directly associated with construction activities included in individual Sections. Where feasible, use same facilities. Maintain Project site, excavations, and construction free of water.

E. General Refuse Disposal Facilities: Collect waste from construction areas and elsewhere daily. Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.

1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.

F. Engineers Field Office: Provide an insulated, weathertight, air-conditioned field office for the exclusive use of the Engineers. Refer to Section 01520 for detailed specifications.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.

B. Stormwater Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.

C. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from construction damage. Protect tree root systems from damage, flooding, and erosion.

D. Site Enclosure Fence: Before construction operations begin, install chain-link enclosure fence with lockable entrance gates. Locate where indicated, or enclose entire Project site or portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering site except by entrance gates.

1. Set fence posts in concrete bases.

2. Provide gates in sizes and at locations necessary to accommodate delivery vehicles and other construction operations.

3. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Owner with two sets of keys.

E. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

F. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.

1. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch-thick exterior plywood.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. Termination and Removal: Unless the Engineer requests that it be maintained longer, remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.

2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.

3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 Section "Closeout Procedures."

END OF SECTION 01500

SECTION 01520 ENGINEERS FIELD OFFICE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for supplying and maintaining a facility, either building or mobile trailer for the exclusive use of the Engineer during construction and closeout activities.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. General: The Engineer's Office shall be an approved and weatherproof building or mobile trailer providing a minimum of 330 square feet of floor space divided into two rooms with an adjoining door. The smaller room shall no be less than 100 square feet with at least two of the six windows. It shall also be equipped with one weatherproof outside door with suitable locking device and six windows with a minimum of eight square feet in size equipped with screens for adequate ventilation and suitable locks. The structure shall have a minimum ceiling height of seven feet

B. Lighting: Electric light, non-glare type luminaries providing a minimum illumination level of 100 foot-candles at desk height level.

C. Heating and Cooling: Sufficient equipment to maintain an ambient air temperature of 70 degrees +/- 5 degrees.

D. Telephone: Two separate phones, with one incoming line, for the exclusive use of the Engineer. Phone shall be programmable with a minimum of ten numbers and shall be equipped with speaker capabilities.

E. First Aid Kit: A standard first aid kit (25-person minimum) approved by the Engineer. Contractor shall restock the first aid kit as needed.

F. Toilet: A separate enclosed room, properly ventilated and complying with all applicable sanitary codes. A lavatory with running hot and cold water, flush toilet, paper and soap products shall also be provided.

G. Fire Extinguisher: Non-toxic, dry chemical fire extinguisher meeting Underwriters Laboratory, Inc. approval for Class A, Class B and Class C fires with a minimum rating of 2A: 10B; 10C. One extinguisher shall be provided for each room.

H. Fire Resistant Cabinet: Fire resistant, legal size, two drawer, file cabinet with lock and 2 keys meeting the requirements for "insulating Filing Devices, Class 350-1 Hour (D)" of ANSI/UL 72 or the Class D rating of the original Underwriters Laboratories specifications for insulated filing devices.

I. Photocopier: A desktop, heavy duty, electric, dry process photocopier capable of copying 8-1/2" x 11", 8-1/2" x 14" and 11" x 17" and an adequate supply of copy paper and copier supplies. Paper and supplies shall be replenished by the Contractor, as needed.

J. Facsimile Machine: Fax machine on a separate telephone line capable of transmitting and receiving faxes up to legal size with transmit speed less than 20 seconds per page. The machine shall be equipped with an automatic document feeder. Auto dialer with up to 10 number memory with automatic redial and on-hook dialing. It shall also be equipped with transmit terminal identification including page number, sender's phone number and name. An adequate supply of fax paper shall be supplied and replenished by the Contractor as needed.

K. Telephone Answering Device: An FCC approved automatic answering device capable of recording outgoing messages of sixty seconds and receiving a minimum of 40 incoming messages of 60 second duration. The unit shall also include a message mark. The unit shall include remote programming of playback, backspace and out-going message re-record and retrieval of messages without a remote beeper unit. The unit shall include computer-generated voice marking of time and date of call.

L. Parking Area: The Contractor shall provide a paved or hard surface parking area for a minimum of four vehicles adjacent to the Engineers Field Office.

M. Furnishings: The Office shall be provided with the following additional furnishings not listed above-

1. Three office desks not less than 30" x 60" equipped with suitable drawers and locks.
2. Six office chairs.
3. One drafting type table approximately 3 feet x 6 feet and supported by brackets and legs.
4. One suitable drafting stool.
5. One vertical plan file rack capable of storing six sets of plans.
6. One office table not less than 30" x 60" in size.
7. Two self-standing metal bookcases approx. 36" wide x 40" high x 12" deep.
8. One bulletin board approx. 24" high x 36" wide.
9. One pencil sharpener.
10. Three waste paper baskets.

PART 3 - EXECUTION

3.1 INSTALLATION

A. The contractor shall install and fully equip the Engineers field office prior to the start of any contract work.

3.2 MAINTENANCE

A. The contractor is responsible to maintain in good working condition all facilities and equipment furnished under this item. Any equipment or facilities found to be inoperable shall be repaired or replaced within five working days of notification by the Engineer.

3.3 REMOVAL

A. The Field office shall remain in service until the Engineer requests its removal in writing or the Owner relinquishes it.

END OF SECTION 01520

SECTION 01570 MAINTENANCE AND PROTECTION OF TRAFFIC

PART 1 - GENERAL

1.1 SUMMARY

A. This section specifies the requirements for maintenance and protection of Traffic during construction of the Project.

B. General:

1. All streets and travel ways shall remain open to the passage of vehicular and pedestrian traffic during the construction period, unless prior written consent is obtained from the Engineer and the governing body having jurisdiction over the street or travel way.

2. Maintenance and protection of traffic shall be provided in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) and any provisions contained in the plans or the contract documents.

3. Safe and adequate ingress and egress to and from intersecting highways, homes and commercial establishments shall be provided and maintained at all times to the satisfaction of the Engineer.

4. The traffic maintenance schemes shown in the MUTCD describe the minimum methods and control devices necessary. The Engineer may order additional devices and/or methods to meet field conditions. No additional payment will be made for additional devices ordered.

5. The Contractor shall give the required advance notice, as indicated in the contract document or by agreement with the Engineer, of his proposed operations to affected police, fire, and other emergency response departments. The Contractor shall give reasonable notice of his proposed operations to owners and tenants of private properties which will be affected by the construction operations.

C. Submittals:

1. Prior to the start of work, the Contractor must submit any proposed changes to the traffic control plan to the Engineer for approval. Any changes which alters the basic concept of the plan must be approved by the Engineer.

PART 2 - PRODUCTS

2.1 DEVICES AND EQUIPMENT

A. All signing, operations, safety, and directive devices shall conform to the Manual of Uniform Traffic Control Devices and the Authority having jurisdiction.

1. Delineators: Delineators shall be of the reflectorized plastic drum type.

2. Warning Signs: Advance warning signs shall be diamond shaped and have black lettering on an orange background.

3. Street Plates: If street plates are used to cover narrow excavations.

PART 3 - EXECUTION

3.1 MAINTENANCE OF TRAFFIC

A. The Contractor shall provide signs, signals, barricades, flares, lights, and all other equipment, service, and personnel necessary to regulate and protect traffic and warn of hazards. The Contractor shall remove temporary equipment and facilities when no longer required, and restore area to original or specified conditions upon removal.

B. When crossings, obstructions, or the temporary closures of street or travelway are required, the Contractor shall provide and maintain suitable bridges, detours or other temporary measures, all of which must be to the satisfaction of the Engineer, for the accommodation of traffic. The duration of the operation shall be for the minimum time practical. Traffic shall be restored as soon as the street or travelway is safely passable.

3.2 WORK ZONES

A. Work zones on opposite sides of the road shall not overlap. A work zone is defined as that area in which traffic is restricted because of construction activities, or that area which involves a drop-off within 10 feet of the edge of pavement.

B. The Contractor shall delineate areas where there is a drop-off near the edge of the traveled way and areas on which it is unsafe to travel. The provisions for delineation shall be as approved by the Engineer, and the governing body having jurisdiction over the street, travelway, or site.

C. Excavations that produce drop-offs on both sides of the traveled way at the same time shall not be permitted.

D. Reflectorized plastic drum delineators shall be used along embankments and at other hazardous locations determined by the Engineer. Delineators shall remain in place until satisfactory protection is provided. Delineators shall be spaced at a distance not to exceed 50 feet, or as directed by the Engineer.

E. The Contractor shall provide 1-inch steel plates to provide for traffic movement over narrow, open excavations. Excavations made for the installation of the pipes will be backfilled at the close of each day.

F. No material is to be stored on the shoulder or within the 20-foot roadside clear area except that which is to be placed that day.

G. The roadside clear area is a strip along the length of the road extending 20 feet from the edge of the travel lane.

H. Construction equipment shall be removed from the roadside clear area of all highway pavement during the hours that the Contractor is not working. This requirement shall not be limited to the contract limits.

I. Traffic Signals and Signs:

1. The Contractor shall provide and operate traffic control and directional signals required to direct and maintain an orderly flow of traffic in areas affected by the Contractor's operations.

2. The Contractor shall provide traffic control and direction signs, mounted on barricades or standard posts at each change of direction of a roadway, at each crossroad, at detours, at hazardous areas, and at parking areas.

3. The correct sequence and spacing of signs, either permanent or temporary must be maintained at all times in accordance with MUTCD unless shown otherwise on the plans. All signs, including guide signs, shall indicate actual conditions at all times and shall be covered, moved, removed, or changed immediately as ordered by the Engineer (A.O.B.E).

4. In order to maintain effective traffic control, the contractor shall be responsible for the maintenance of all signs, cones, flashers, barrels, and other devices the Contractor shall ensure that they are in place and in good condition.

J. Flag Personnel:

1. The Contractor shall provide suitably qualified and equipped flag personnel when construction operations encroach on traffic lanes. The regulation of traffic by flag personnel shall be in accordance with the requirements of the MUTCD or the Authority having jurisdiction.

K. Flares and Lights:

1. During periods of low visibility the Contractor shall provide flares and lights to guide traffic, to clearly delineate traffic lanes, and to warn of hazardous areas. Flag personnel shall use lights in directing traffic during periods of low visibility. Illumination of critical traffic and parking areas shall be provided by the Contractor during periods of low visibility.

L. Parking Control:

1. The Contractor shall control all Contractor related vehicular parking such that it does not interfere with public traffic and parking, access to emergency vehicles, Owner's operations, or construction operations. The Contractor shall provide temporary parking facilities for the public as construction operations dictate.

2. The Contractor shall provide parking areas for workman's private vehicles that comply with applicable laws, regulations, codes, and ordinances. The Contractor shall ensure free vehicular access to and through the parking areas. The Contractor shall not permit parking on or adjacent to access roads or in non-designated areas.

M. Haul Routes:

1. The Contractor shall consult with governing authorities and establish thorough fares which shall be used as haul routes and site access. The Contractor shall confine construction traffic to designated haul routes. The Contractor will be required to provide traffic control at critical points of haul routes to expedite traffic flow and minimize interference with normal public traffic. Where required by governing authorities, the Contractor shall prepare and submit traffic control plans for approval by both the Engineer and the governing Authority prior to commencement of work.

N. Contractor Operations:

1. If the Engineer notifies the Contractor or his superintendent of any hazardous construction practices, all operations in that area shall be discontinued and immediate remedial action shall be taken to the satisfaction of the Engineer before work is resumed.

END OF SECTION 01570

SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following administrative and procedural requirements: selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation, shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.

2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

D. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

E. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

1.4 SUBMITTALS

A. Product List: Submit a list, in tabular from, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.

1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.

2. Form: Tabulate information for each product under the following column headings:

a. Specification Section number and title.

b. Generic name used in the Contract Documents.

c. Proprietary name, model number, and similar designations.

d. Manufacturer's name and address.

e. Supplier's name and address.

f. Installer's name and address.

g. Projected delivery date or time span of delivery period.

h. Identification of items that require early submittal approval for scheduled delivery date.

3. Initial Submittal: Within 15 days after date of commencement of the Work, submit 3 copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.

a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.

4. Completed List: Within 30 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.

5. Engineer's Action: Engineer will respond in writing to Contractor within 15 days of receipt of completed product list. Engineer's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Engineer's response, or lack of response, does not constitute a waiver of requirement that products comply with the Contract Documents.

B. Substitution Requests: Requests for substitution will be considered if received within 60 days after commencement of the Work. Requests received more than 60 days after commencement of the Work may be considered or rejected at the discretion of the Engineer. Submit 3 copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use CSI Form 13.1A.

2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

   a. Statement indicating why specified material or product cannot be provided.

   b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

   c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

   d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

   e. Samples, where applicable or requested.

   f. List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners.

   g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

   h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

   i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.

   j. Cost information, including a proposal of change, if any, in the Contract Sum.

   k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.

   l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within one week of receipt of a request for substitution. Engineer will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

   a. Form of Acceptance: Change Order.

   b. Use product specified if Engineer cannot make a decision on use of a proposed substitution within time allocated.

C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

D. Warranty And Bond Submittals: Submit written warranties to the Engineer prior to the date certified for Substantial Completion. If the Engineer's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Engineer.

1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Engineer within fifteen days of completion of that designated portion of the Work.

2. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Engineer for approval prior to final execution.

3. Forms for special warranties are included at the end of this Section. Prepare a written document utilizing the appropriate form, ready for execution by the Contractor, or the Contractor and subcontractor, supplier or manufacturer. Submit a draft to the Owner through the Engineer for approval prior to final execution.

   a. Refer to individual Sections of Divisions-2 through -16 for specific content requirements, and particular requirements for submittal of special warranties.

4. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.

   a. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.

   b. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS," the Project title or name, and the name of the Contractor.

   c. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

B. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

1. When specified products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a timely manner, consult with the Engineer for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities, to the fullest extent possible.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

5. Store products to allow for inspection and measurement of quantity or counting of units.

6. Store materials in a manner that will not endanger Project structure.

7. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

8. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

9. Protect stored products from damage.

B. Storage: Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.

2. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Warranty Requirements: Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

1. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

2. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

3. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

a. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

4. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

PART 2 - PRODUCTS

2.1 PRODUCT OPTIONS

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Engineer will make selection.

5. Where products are accompanied by the term "match sample," sample to be matched is Engineer's.

6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures: Procedures for product selection include the following:

1. Product: Where Specification paragraphs or subparagraphs titled "Product" name a single product and manufacturer, provide the product named.

   a. Substitutions may be considered, unless otherwise indicated.

2. Manufacturer/Source: Where Specification paragraphs or subparagraphs titled "Manufacturer" or "Source" name single manufacturers or sources, provide a product by the manufacturer or from the source named that complies with requirements.

   a. Substitutions may be considered, unless otherwise indicated.

3. Products: Where Specification paragraphs or subparagraphs titled "Products" introduce a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.

   a. Substitutions may be considered, unless otherwise indicated.

4. Manufacturers: Where Specification paragraphs or subparagraphs titled "Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.

   a. Substitutions may be considered, unless otherwise indicated.

5. Available Products: Where Specification paragraphs or subparagraphs titled "Available Products" introduce a list of names of both products and manufacturers, provide one of the products listed or another product that complies with requirements. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

6. Available Manufacturers: Where Specification paragraphs or subparagraphs titled "Available Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed or another manufacturer that complies with requirements. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

7. Product Options: Where Specification paragraphs titled "Product Options" indicate that size, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide either the specific product or system indicated or a comparable product or system by another manufacturer. Comply with provisions in "Product Substitutions" Article.

8. Basis-of-Design Products: Where Specification paragraphs or subparagraphs titled "Basis-of-Design Product[s]" are included and also introduce or refer to a list of manufacturers' names, provide either the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes,

profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.

a. Substitutions may be considered, unless otherwise indicated.

9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product (and manufacturer) that complies with requirements and matches Engineer's sample. Engineer's decision will be final on whether a proposed product matches satisfactorily.

a. If no product available within specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents on "substitutions" for selection of a matching product.

10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product (and manufacturer) that complies with other specified requirements.

a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, or texture from manufacturer's product line that does not include premium items.

b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Engineer will select color, pattern, or texture from manufacturer's product line that includes both standard and premium items.

11. Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division 1 for allowances that control product selection and for procedures required for processing such selections.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Engineer will consider requests for substitution if received within 60 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Engineer.

B. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

2. Requested substitution does not require extensive revisions to the Contract Documents.

3. Requested substitution is consistent with the Contract Documents and will produce indicated results.

4. Substitution request is fully documented and properly submitted.

5. Requested substitution will not adversely affect Contractor's Construction Schedule.

6. Requested substitution has received necessary approvals of authorities having jurisdiction.

7. Requested substitution is compatible with other portions of the Work.

8. Requested substitution has been coordinated with other portions of the Work.

9. Requested substitution provides specified warranty.

10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

11. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.

12. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.

13. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.

2.3 COMPARABLE PRODUCTS

A. Where products or manufacturers are specified by name, submit the following, in addition to other required submittals, to obtain approval of an unnamed product:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.

2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

3. Evidence that proposed product provides specified warranty.

4. List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners, if requested.

5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01600

SECTION 01700 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. General installation of products.
4. Coordination of Owner-installed products.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.
8. Correction of the Work.

1.3 SUBMITTALS

A. Qualification Data: For land surveyor to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.

C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

D. Certified Surveys: Submit 3 copies signed by land surveyor upon completion of all Contract work.

E. Final Property Survey: Submit 6 copies showing the Work performed and record survey data.

1.4 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Engineer's Qualifications: A professional Engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.

2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

a. Description of the Work.
b. List of detrimental conditions.
c. List of unacceptable installation tolerances.
d. Recommended corrections.

2. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Engineer and Owner not less than 48 hours in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without Owner's written permission.

C. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

E. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Engineer. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation." A sample copy is included at the end of this Section.

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.

B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.

2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.

3. Inform installers of lines and levels to which they must comply.

4. Check the location, level and plumb, of every major element as the Work progresses.

5. Notify Engineer when deviations from required lines and levels exceed allowable tolerances.

6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Engineer.

3.4 FIELD ENGINEERING

A. Identification: Owner will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Engineer. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Engineer before proceeding.

2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Benchmarks: Establish and maintain a minimum of 2 permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.

3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

D. Certified Survey: On completion of the excavations in each area of concern, as identified on the Drawings, prepare a certified survey showing dimensions, locations, angles, and elevations of the final excavation limits.

E. Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.

2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.

2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

G. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 PROGRESS CLEANING

A. General: Clean Project site daily. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Site Entrance: All roadways shall be kept free of dirt and debris at all times. Clean and sweep roadways as necessary and as ordered by Engineer or Owner.

D. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

E. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

F. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

G. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.8 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

END OF SECTION 01700

SECTION 01731 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Refer to other sections for specific requirements and limitations applicable to cutting and patching individual parts of the work.

1.3 DEFINITIONS

A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

A. Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required before proceeding, submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Extent: Describe the extent of cutting and patching, show how they will be performed, and indicate why they cannot be avoided.

2. Changes to Existing Construction: Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.

3. Products: List products to be used and firms or entities that will perform the Work.

4. Dates: Indicate dates when cutting and patching will be performed.

5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.

7. Engineer's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right of the Engineer to later require removal and replacement of unsatisfactory work.

8. Describe means for the protection of adjacent areas to where cutting and patching shall take place.

1.5 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

1. The following structural elements require Engineer's approval of a cutting and patching proposal.

a. Bulkhead system along the waterfront
b. Shoring, bracing, and sheeting

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections of these Specifications.

B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to cutting existing services, examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed. Take corrective action before proceeding. If unsafe or unsatisfactory conditions are encountered, investigate both sides of the surface involved. Determine exact location of structural members.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary shoring and support of Work to be cut to prevent settlement or other damage to existing construction to remain.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, where cutting is required, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Existing Finished Surfaces: To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.

5. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Comply with specified tolerances. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Perform patching around items penetrating existing construction in a manner that will maintain the water and fire resistive capability of the existing construction.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

2. Where reinstallation of removed items is indicated, reinstall them to a condition equal to or better than their condition before removal.

END OF SECTION 01731

SECTION 01732 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Demolition and removal of selected site elements.
2. Repair procedures for selective demolition operations.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled. In the case of removed concrete, all concrete shall be crushed on-site and temporarily stockpiled on-site for reuse as fill.

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

B. Historic items, relics, and similar objects including, but not limited to, monuments and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.
1. Coordinate with Owner's representative or archaeologist, who will establish special procedures for removal and salvage.

1.5 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

B. Predemolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.

1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Professional Engineer Qualifications: Comply with Division 1 Section "Quality Requirements."

C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Standards: Comply with ANSI A10.6 and NFPA 241.

1.7 PROJECT CONDITIONS

A. Owner assumes no responsibility for condition of areas to be selectively demolished.

1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

B. Storage or sale of removed items or materials on-site will not be permitted.

C. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

A. Use repair materials identical to existing materials.

1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
2. Use materials whose installed performance equals or surpasses that of existing materials.

B. Comply with material and installation requirements specified in individual Specification Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

3.2 UTILITY SERVICES

A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

3.4 SELECTIVE DEMOLITION

A. General: Demolish and remove existing construction only to the extent indicated. Use methods required to complete the Work within limitations of governing regulations and proceed with selective demolition systematically, from higher to lower level.

B. Removed and Salvaged Items: Comply with the following:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Burning: Do not burn demolished materials.

END OF SECTION 01732

SECTION 01770 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Project Record Documents.
3. Operation and maintenance manuals.
4. Warranties.
5. Instruction of Owner's personnel.
6. Final cleaning.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.

2. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

3. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

4. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.

5. Terminate and remove temporary facilities from Project site, along with construction tools and similar elements.

6. Complete final cleaning requirements.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."

2. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.

B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.

1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.

b. Accurately record information in an understandable drawing technique.

c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.

2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.

3. Mark important additional information that was either shown schematically or omitted from original Drawings.

4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.

5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.

C. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.6 WARRANTIES

A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

b. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

c. Remove tools, construction equipment, machinery, and surplus material from Project site.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01770

SECTION 02011 TEST PITS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the excavation and backfilling of test pits for the purpose of verifying the exact locations of underground utilities, structures, and other subsurface conditions.

1.2 SUBMITTALS

A. Sketches: Submit a sketch showing the location of the subsurface features which were uncovered in the test pit, including the following information:

1. horizontal location of the subsurface feature relative to three individual surface features.
2. depth of feature below ground surface.
3. diameter, type, and condition of pipe or conduit.
4. orientation of pipe, conduit or structure relative to other site features.
5. other pertinent dimensions.
6. test pit identification number.

1.3 JOB CONDITIONS

A. Perform test pits only within the limits of the work, easements and rights of way.

B. Excavate test pits with care to avoid damage to structures and utilities. Excavate by hand if necessary. Promptly repair any damaged utilities and structures at no cost to the Owner.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXCAVATION

A. Dig test pits in advance of construction, at the locations shown on the Drawings, or where directed by the Engineer. Determine the exact location of all pipes, conduits, duct, or other interfering structures in both horizontal and vertical locations. Excavate to the depth and width necessary to accurately determine the locations of the utilities of interest.

B. Backfill test pits in accordance with Section "Trenching, Backfilling, and Compaction," and grade surface as suitable for temporary traffic or use.

END OF SECTION 02011

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes furnishing all materials, labor and equipment to perform the following:

1. Excavate, remove, clean and dispose of underground storage tanks and any associated piping as shown on the Contract Drawings.

2. Remove contaminated soil as directed by Engineer or the New York State Department of Environmental Conservation in accordance with Section 02221 "Site Management Plan".

1.2 CODES AND STANDARDS

A. Work shall conform to all applicable federal, state and local laws, ordinances, regulations, codes and standards including the following, at a minimum:

1. National Fire Protection Association (NFPA) Section 30 for Flammable and Combustible Liquids and Section 31 for Oil Burning Equipment.

2. Occupational Safety and Health Administration (OSHA) 29 CFR Parts 1910.120, 1910.146, and 1926.650.

3. Code of Federal Regulations (CFR), 40 CFR Parts 260-265, 280.

4. New York Code of Rules and Restrictions, (6 NYCRR) Parts 612-614, 372, 364, 371.

5. Underwriter's Laboratories (UL) Criteria.

6. Steel Tank Institute (STI).

B. Where minimum requirements of Codes are exceeded by the drawings and specifications, the requirements of the drawings and specifications shall govern. Where in conflict, Local Code requirements shall take precedence. Where any requirements of the drawings and specifications are not in conformance with Code requirements, notify the Engineer before the work is initiated. The decision of Engineer in interpreting the drawings and specifications and Code requirements related thereto shall be considered final.

1.3 REFERENCE STANDARDS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred in the text by basic designation only.

B. American Petroleum Institute (API) Standards

1. Recommended Practice 1604 (2001), "Closure of Used Underground Petroleum Storage Tanks"

2. Recommended Practice 2003 (1998), "Protection Against Ignitions Arising out of Static, Lightning and Stray Currents"

3. Publication 2015 (2001), "Requirements for Safe Entry and Cleaning Petroleum Storage Tanks"

4. Publication 2217A (1997), "Guidelines for Work in Inert Confined Spaces in the Petroleum Industry - The Lead Hazard Associated with Tank Entry and Cleaning"

5. Publication 2219 (1999), "Safe Operation of Vacuum Truck in Petroleum Service."

C. National Fire Protection Association (NFPA) Codes

1. NFPA 30 (2003), "Flammable and Combustible Liquids Code"

1.4 QUALITY ASSURANCE

A. Contractor's, Subcontractors and their employees responsible for tank closures shall be trained and experienced with all applicable safety rules and regulations, the use of equipment and procedures for testing and inerting tanks, the handling and disposal of the tank systems and types of products likely to be encountered, and the applicable sections of the codes and referenced standards listed in these specifications.

B. Use adequate numbers of skilled workmen and operators who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

C. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

D. Provide access for and cooperate with any engineering or testing company authorized by the Engineer.

1.5 SUBMITTALS

A. Submit required data, which shall include but not be limited to the following:

1. Applicable Permits.
2. Receipt from site where tanks were taken for disposal.
3. Copy of Manifests for waste disposal.

1.6 PROJECT CONDITIONS

A. During the course of underground storage tank and above ground storage tank cleaning and closure, workers may be exposed to liquids, vapors or wastes. Special precautions shall be observed by all individuals engaged in the procedures outlined in this specification.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PREPARATION

A. Obtain applicable permits and schedule work with Owner and applicable agencies. Notify the New York State Department of Environmental Conservation (NYSDEC) of tank removal date within seven (7) days of Notice to-Proceed. Work shall be performed in accordance with API 1604. Notify the City of Poughkeepsie Fire Marshall, the Engineer, and the NYSDEC seven (7) days prior to removing tanks.

B. Provide and properly locate adequate barriers and warning signs for work areas which will be closed during performance of the work. Such warnings shall include, but not be limited to, "No Smoking" signs and highly visible cones and/or flagging.

C. Provide adequate protection to pavement areas not included in the work, and all other property not directly involved in the performance of the work. Repair or replace damaged property to the satisfaction of the Engineer.

D. Utilities:

1. Locate all existing utilities prior to beginning work in the area where the tank systems are located. Coordinate with Owner.

2. Protect existing utilities to assure that they are not damaged.

3. Coordinate with Owner to arrange shutdown of any utilities before excavating in the areas where they are located.

4. Repair or replace damaged utilities to the satisfaction of the Engineer at no extra cost to the Owner.

E. Flammability and Combustibility Considerations:

1. Flammable or combustible vapors are likely to be present in the work area. The concentration of vapors in the tanks, the excavation, or the work area may reach the flammable (explosive) range before venting is completed and a safe atmosphere is reached. Therefore, precautions must be taken to:

a. Eliminate all potential sources of ignition from the area (for example, smoking materials, non explosive-proof electrical and internal combustion equipment)

b. Prevent the discharge of static electricity during venting of flammable vapors, and prevent the accumulation of vapors at ground level. Refer to API Publication 2015 and Recommended Practice 2003 for general precautionary measures to follow during the inerting procedure.

2. An intrinsically safe combustible gas indicator (CGI) should be used to check for hazardous vapor concentrations. All open flame and spark-producing equipment within the vapor hazard area should be shut down. Electrical equipment (for example, pumps and portable hand tools) used in the area must be explosion-proof in accordance with NFPA 70B Class I, Division I, Group D or otherwise approved for use in potentially explosive atmospheres.

3.2 REMOVAL OF FLAMMABLE VAPORS

A. Flammable vapors shall be removed in accordance with Section 02054, Tank Cleaning.

3.3 CLEANING

A. Each tank system shall be cleaned prior to removal from the excavation. Piping, if present, shall be back drained and/or flushed into each tank prior to cleaning.

B. Cleaning of tank systems shall be performed in accordance with NFPA 327 and as specified in Section 02054, Tank Cleaning.

3.4 TESTING

A. The tank atmosphere and the area surrounding each tank excavation shall be regularly tested for flammable or combustible vapor concentrations until the tank is removed from both the excavation and the site. Such tests are to be made with a combustible gas indicator which is properly calibrated according to the manufacturer's instructions (typically on pentane or hexane in air), and which is thoroughly checked and maintained in accordance with the manufacturer's instructions. Persons responsible for testing must be completely familiar with the use of the instruments.

B. The tank vapor space is to be tested by placing the combustible gas indicator probe into the fill opening of each tank. Readings should be taken at the bottom, middle, and upper portions of the tank, and the instrument should be cleared after each reading. If the tank is equipped with a non-removable fill tube, readings should be taken through another opening. Liquid product must not enter the probe. Readings of twenty (20) percent or less of the lower flammable limit must be obtained before the tank is considered safe.

C. Combustible gas indicator readings may be misleading where the tank atmosphere contains less than five (5) percent by volume oxygen, as in a tank vapor-freed with carbon dioxide, nitrogen, or other inert gas. In general, readings in oxygen-deficient atmospheres will be on the high or safe side. It may be desirable to use an oxygen indicator to assess the oxygen concentration.

3.5 REMOVAL OF UNDERGROUND TANKS

A. Preparation

1. All product, liquid and residues shall be removed from each tank and piping in accordance with Section 02054 "Tank Cleaning".

2. Excavate to the top of tank and remove soils. Excavation within the Area of Concern shall be conducted in conformance with the Section 02221 "Site Management Plan".

3. Remove each fill pipe, gauge pipe, product lines and other tank fixtures, if present. Remove each drop tube. Remove all non-product lines, such as vapor recovery lines, vent lines, if present.

4. Any contaminated soil in the vicinity of the tank shall be managed in accordance with Section 02221 "Site Management Plan".

B. Removal & Disposal

1. Excavate around the tank to uncover it for removal. Remove tank straps if necessary. Fasten chains or cables to the tank lifting lugs and lift the tank out with equipment of adequate capacity. Remove the tank from the excavation and place it on a level surface. Use wood blocks to prevent movement of the tank after removal and prior to loading on a truck for transportation.

2. Remove concrete tie-down pads in the tank excavation, if applicable.

3. The tanks shall be removed from the site as promptly as possible after vapor-freeing procedures and cleaning have been completed, preferably on the day of tank removal from the excavation.

a. Before a tank is removed from the site, the tank atmosphere shall be checked with a combustible gas indicator to ensure that it does not exceed ten (10) percent of the lower flammable limit.

b. The tank shall be secured on a truck for transportation to the disposal site. The tank shall be transported in accordance with all applicable local, state, and federal regulations.

c. Whether sold to a scrap dealer or disposed of at an acceptable facility, sufficient holes should be made in the tank to render it unfit for further use, or it may be cut-up into sections.

d. A bill of sale shall be used to transfer tank ownership. The bill of sale should include the purchaser's acknowledgment that he assumes all liability related to the tank.

4. Remove, decontaminate, and properly dispose of all pumps, piping, concrete and equipment associated with the tanks.

END OF SECTION 02052

SECTION 02054 TANK CLEANING

PART 1 - GENERAL

1.1 SUMMARY

1. This Section includes furnishing all labor, materials and equipment to remove flammable vapors, clean interior and dispose of wash waters from underground storage tank systems and any associated piping as shown on the Contract Drawings.

1.2 CODES AND STANDARDS

A. Work shall conform to all applicable federal, state and local laws, ordinances and regulations and codes and standards including:

1. National Fire Protection Association (NFPA) Codes.
2. Occupational Safety and Health Administration (OSHA).
3. Owner's Insurance Underwriters Criteria.
4. Code of Federal Regulations (CFR), 40 CFR 280.
5. Underwriter's Laboratories (UL) Criteria.

B. Where minimum requirements of Codes are exceeded by the drawings and specifications, the requirements of the drawings and specifications shall govern. Where in conflict, Local Code requirements shall take precedence. Where any requirements of the drawings and specifications are not in conformance with Code requirements, notify the Engineer before the work is initiated. The decision of Engineer in interpreting the drawings and specifications and Code requirements related thereto shall be considered final.

1.3 REFERENCE STANDARDS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

B. American Petroleum Institute (API) Standards

1. Recommended Practice 1604 (2001), "Closure of Used Underground Petroleum Storage Tanks"

2. Recommended Practice 2003 (1998), "Protection Against Ignitions Arising out of Static, Lightning and Stray Currents"

3. Publication 2015 (2001), "Requirements for Safe Entry and Cleaning Petroleum Storage Tanks"

4. Publication 2217A (1997), "Guidelines for Work in Inert Confined Spaces in the Petroleum Industry"

5. Publication 2219 (1999), "Safe Operation of Vacuum Truck in Petroleum Service."

C. National Fire Protection Association (NFPA) Codes

1. NFPA 30 (2003), "Flammable and Combustible Liquids Code"

1.4 QUALITY ASSURANCE

A. Contractors, subcontractors and their employees responsible for tank vapor removal and cleaning shall be trained and experienced with all applicable safety rules and regulations, the use of equipment and procedures for testing and vapor-freeing tanks, the cleaning and disposal of wash waters for the tank systems and types of products likely to be encountered and the applicable sections of the Codes and Standards and Referenced Standards listed in these specifications. Work shall be performed in accordance with API 1604, and NFPA 327.

B. Use adequate numbers of skilled workmen and operators who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with specified requirements and the methods needed for proper performance of the work of this Section.

C. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

D. Provide access for and cooperate with any testing company authorized by the Engineer.

1.5 DEFINITIONS

A. Definitions shall be as defined in NFPA 327.

1.6 JOB CONDITIONS

A. During the course of underground storage tank cleaning, workers may be exposed to liquids, vapors or wastes. Special precautions shall be observed by all individuals engaged in the procedures outlined in this specification.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL PRECAUTIONS

A. Work on tanks that have held liquids shall be performed under the supervision of persons who understand the fire and explosion potential involved. Workers shall be sufficiently skilled to safely carry out the operations necessary. The characteristics of the previous contents of the tank shall be determined.

B. Before cleaning work is started on tanks that may be under pressure, the pressure shall be reduced to atmospheric. The tank contents shall be vented to a safe location.

C. Any equipment that may provide a source of ignition shall not be permitted within the vicinity of a tank being cleaned until the area has been tested and found to be vapor free.

3.2 CLEANING PROCEDURES

A. General: Cleaning operations shall be conducted in the open if practical.

1. Disconnect or remove sources of ignition from the vicinity of the tank before venting or cleaning operations are started. All electrical equipment in the vicinity shall be in accordance with NFPA 70, National Electrical Code.

2. Take appropriate steps to protect personnel from harmful exposure to toxic or corrosive vapors or gases.

3. Remove liquids and vapors form the product lines by purging and draining the lines toward the tank. To minimize the hazards of passing through the flammable range, the lines can be first purged with an inert gas, and then ventilated with air if necessary.

4. Empty and drain the tank of all contents. This should include removal of liquids or gases from any internal piping, traps, and standpipes. Flushing with a proper cleaning liquid may be necessary.

5. Remove liquids and residues from the tank by using explosion-proof or air-driven pumps. Pump motors and suction hoses must be grounded to the tank or otherwise grounded to prevent electrostatic ignition hazards. It may be necessary to use a hand pump to remove the last few inches of liquid from the bottom of the tank. If a vacuum truck is used for removal of liquids or residues, the area of operation for the vacuum truck must be vapor-free. The truck should be located upwind from the tank and outside the path of probable vapor travel. The vacuum pump exhaust gases should be discharged through a hose of adequate size and length downwind of the truck and tank area. See API publication 2219 for vacuum truck operating and safety practices.

6. If necessary, after inerting, the tank may be accessed for mechanical scrubbing and removal of sludge. This can be accomplished by cutting a hole in the tank to provide a means of entry. Contractor shall adhere to OSHA regulations for confined space entry and API publication 2015 and recommended practice 1604.

B. Removal of Flammable Vapors

1. Remove flammable vapors by one of the methods described in these specifications, or as required by local codes. These methods provide a means for temporary vapor-freeing the tank atmosphere. However, it is important to recognize that the tank may continue to be a source of flammable vapors even after following the vapor removal procedures described. For this reason, caution must always be exercised when handling or working around tanks that have stored flammable or combustible liquids. Before initiating work in the tank area or on the tank, a combustible gas indicator should be used to assess flammable vapor concentrations in the tank and work area.

2. Displacement with Air: Vapor removal/purging may be accomplished by purging with air, and a safe atmosphere may be sustained by continuing the ventilation. When openings of sufficient size are available, air movers that do not provide an ignition source may be attached so that air is drawn through one opening and discharged through another opening. When openings cannot accommodate an air mover, the container may be purged by introducing air so that it will circulate through the tank or container and be discharged to the outside. In air purging, the concentration of vapor in air in the tank may go through the flammable range before a safe atmosphere is obtained; therefore, every precaution shall be taken to ensure that all ignition sources have been removed from the vicinity. An effective ground shall be maintained between the air mover and the tank being cleared.

3. Displacement with Inert Gas: To minimize the hazards of passing through the flammable range, the tank can be first purged with an inert gas, and then ventilated with air.

C. Inerting of Vapor Space: Inerting is a means of safeguarding a tank by reducing the oxygen content to the point where combustion cannot take place. Individuals in direct charge of the work must be thoroughly familiar with the limitations and characteristics of the inert gas being used. Briefly, the procedure for inerting is as follows:

1. Close all openings in the tank with the exception of the fill connection and vent.

2. Cracks or other damaged sections shall be plugged.

3. Flammable and combustible vapors may be purged with an inert gas such as carbon dioxide (CO_2) or nitrogen (N_2). The inert gas should be introduced through a single tank opening at a point near the bottom of the tank at the end of the tank opposite the vent. When inert gases are used, the should be introduced under low pressure to avoid the generation of static electricity. When using CO_2 or N_2, pressures in the tank should not exceed five (5) pounds per square-inch gauge (PSIG).

   The process of introducing compressed gases into the tank may a create a potential ignition hazard as the result of the development of static electrical charges. The discharging device must therefore be grounded. CO_2 extinguishers shall not be used for inerting flammable atmospheres.

4. The vapors in the tank may be displaced by adding solid carbon dioxide (dry ice) to the tank in the amount of at least 1.5 pounds per 100 gallons of tank capacity. The dry ice should be crushed and distributed evenly over the greatest possible area in the tank to promote rapid evaporation. As the dry ice vaporizes, flammable vapors will flow out of the tank and may surround the area. Therefore, where practical, plug all tank openings except the vent after introducing the solid CO_2 and continue to observe all normal safety precautions regarding flammable or combustible vapors. Make sure that all of the dry ice has evaporated before proceeding.

5. Flammable vapors may be exhausted from the tank by one of the methods of tank ventilation listed in API 1604, with Engineer=s approval.

6. In the case of a tank inerted with nitrogen, the oxygen content may be measured directly by an oxygen indicator. When carbon dioxide is used, the oxygen percentage can be calculated from the percentage of carbon dioxide in the tank measured by means of a carbon dioxide indicator.

3.3 TESTING PROCEDURES

A. Testing for Flammability: The test for flammability is the most important phase of the cleaning procedures and determines whether or not the cleaning has been effective. These tests may be made with a combustible gas indicator. Readings from most combustible gas indicators give the percentage of lower flammable limit of the vapors present in an atmosphere. The readings may be misleading where the atmosphere contains less than about five percent by volume of oxygen as in an inerted container although in general the readings in oxygen-lean atmospheres will be on the high or safe side. It is essential that the operator using the indicator be well-trained in the use of the instrument and that the operator perform the checks recommended by the manufacturer to ensure that the instrument is in good operating condition. The vapor content of the gas leaving the tank should be tested periodically while ventilation or air purging is in progress. If an air mover is used to exhaust air from a tank the discharge from the air mover will be diluted with air used in the jet, but the results of the test at this point will still be indicative of the change of vapor concentration within the vessel and when the desired low concentration is reached, the condition of the tank or container itself may be checked by taking samples at appropriate points.

B. Testing for Oxygen Content: When purging a tank with an inert gas, a combustible gas indicator may not indicate correctly the actual flammability of the sample. The concentration of oxygen shall be determined by an appropriate oxygen indicator.

3.4 WASHWATERS

A. All product, sludge and wash waters shall be disposed of in an approved manner acceptable to federal, state and local regulations.

END OF SECTION 02054

SECTION 02070 SELECTIVE DEMOLITION, SALVAGE FOR REUSE, AND UTILITY PROTECTION

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Work Included:

1. Carefully demolish and remove from the site those items scheduled to be so demolished and removed.

2. Carefully remove and store off or on site those items scheduled to be reused/salvaged. Replace these items as indicated on the drawings such that they are undamaged and fit for their intended purpose.

3. All utility lines that are altered or relocated during the construction are to be of an equal standard to those now existing, and are to be acceptable to the Owner and the appropriate Utility Company. The Contractor is to inform the Owner regarding all work that may affect the existing utilities. The Owner will make arrangements with the Utility Company for services to be cut-off if required during construction. The Contractor is responsible for notification of local utilities (Call Before You Dig or equivalent).

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.

1.3 SUBMITTALS

A. Except for items specifically scheduled for reuse, demolished material shall be considered to be property of the Contractor and shall be completely removed from the job site and disposed of in legal manner. The Contractor shall submit a detailed disposal plan to the Engineer. The disposal plan shall include the name, address and telephone number of the disposal site. The Contractor shall submit to the Engineer a signed manifest and trip ticket stating that the debris was disposed at the stated site within 24 hours after the material has left the site. The disposal plan shall be submitted to the Owner for review with the Form of Bid.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide materials, not specifically described but required for a complete and proper execution of the Work, as selected by the Contractor subject to the review of the Engineer.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which Work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until satisfactory conditions are corrected.

3.2 DEMOLITION

A. The Engineer and the New York State Department of Environmental Conservation must be notified a minimum of 7 days prior to commencing with the demolition of the bulkheads.

B. By careful study of the Contract Documents, determine the location and extent of selective demolition to be performed.

C. In company with the Engineer, visit the site and verify the extent and location of selective demolition required.

1. Carefully identify limits of selective demolition.
2. Secure the Engineer's review of the items scheduled for selective demolition.
3. Demolish and remove the scheduled items.

D. Prepare and follow an organized plan for demolition and removal of items.

1. Shut off, cap, and otherwise protect existing utility lines in accordance with the requirements of the public agency or utility having jurisdiction.

2. Completely remove items scheduled to be so demolished and removed, leaving surfaces clean, solid, and ready to receive new materials specified elsewhere or excavation.

3. In all activities, comply with pertinent regulations of governmental agencies having jurisdiction.

E. Exercise all necessary care so as not to damage items scheduled to remain in place for re-use.

F. Except for items specifically scheduled for reuse or to be turned over to the Owner, demolished material shall be considered to be property of the Contractor and shall be completely removed from the job site and disposed of in accordance with all Federal, State and local regulations. Provide documentation to the Engineer that material has been disposed of in such a manner.

3.3 RECYCLING

A. All concrete scheduled for removal and not grossly contaminated with petroleum (e.g saturated with petroleum product), as determined by the Engineer or New York State Department of Environmental Conservation, shall be crushed on-site, and temporarily stockpiled on-site for reuse as fill material. All reinforcing steel shall be recycled off-site.

B. Concrete that is grossly contaminated with petroleum will be treated as waste and properly disposed of off-site in accordance with Section 02221 "Site Management Plan".

3.4 REPLACEMENTS

A. In the event of demolition or damage caused to items not so scheduled to be demolished, promptly replace such items to the approval of the Owner and at no additional cost to the Owner.

3.5 ALTERATIONS TO REUSED ITEMS

A. All alterations to reused items are to be of an equal standard to their original construction, or as otherwise indicated in these Specifications. The Contractor is responsible for ensuring that the dimensions of reused items are adjusted to suit the new construction. Drawings are to be presented to the Engineer for review prior to making any alterations; however, this review does not relieve the Contractor of his responsibilities as indicated elsewhere in this Contract.

3.6 RELOCATION OF UTILITIES

A. Relocate existing utilities as required during construction such that services to the site are maintained to the Owner's satisfaction. The Contractor is responsible for liaison with the Owner on all aspects of utility service maintenance and relocation. If replacement of utilities is undertaken by a Utility Company or others, the Contractor shall coordinate these activities with its own work.

END OF SECTION 02070

SECTION 02110 CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes, but is not necessarily limited to:

1. Removal of trees, brush, grass and other vegetation.

2. Topsoil stripping.

3. Clearing and grubbing.

4. Removal of miscellaneous above-grade and below-grade structures, piping, etc. that will interfere with the placement of the cover system.

5. Disposal of debris.

B. The site shall be cleared and grubbed within the project limits as shown on the Drawings.

1.2 PROJECT CONDITIONS

A. Conduct site clearing operations to ensure minimum interference with roads, streets, walks and other adjacent occupied or used facilities.

B. The Contractor shall prevent damage to all pipes, conduits, wires, cable or structures above or below ground. No land monuments, property markers, or official datum points shall be damaged or removed until an authorized agent has witnessed or otherwise referenced their location and approved their removal. The Contractor shall so control his operations as to prevent damage to trees and shrubs which are to be preserved. Protection may include fences and boards lashed to trees to prevent damage from blasting or machine operations. Fresh scars and wounds shall be painted with an approved tree paint.

C. Provide protections necessary to prevent damage to adjoining properties. Restore damaged items to their original condition, at no additional cost to the Owner, and as acceptable to the Engineer.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 SITE CLEARING

A. Remove trees, shrubs, grass and other vegetation, improvements, or obstructions interfering with installation of new construction. Grass and scrub removal shall only include the mowing of all grass on site to a maximum height of four (4) inches. All removed vegetation, including stumps, roots, brush/grass clippings, and other vegetative waste shall be property disposed off-site.

3.2 CLEARING AND GRUBBING

A. Clear the site of trees, shrubs, and other vegetation, except those designated to be left in place.

B. Use only hand methods for grubbing inside the drip line of trees to be left in place.

C. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is required. Place fill in horizontal layers not exceeding 6-inches loose depth and compact to density of surrounding original ground.

3.3 TOPSOIL STRIPPING

A. Topsoil shall be defined as friable clayey loam found in a depth of not less than three (3) inches.

B. Topsoil shall be removed only in areas required to complete the work and excavations indicated on the Drawings.

C. Strip topsoil to whatever depths encountered, such that mixing with the subsoil is prevented.

D. Topsoil shall be placed only in excavation areas designated on the Drawings. Surplus topsoil stripped from the project site shall be disposed of off-site at a properly permitted facility and in accordance with Section 02221 "Site Management Plan."

E. Stockpile topsoil, to be re-used in the excavations, in a location acceptable to the Engineer.

F. All topsoil not stripped as part of the remedial activities will be removed under a separate contract or left in placed and covered with the proposed soil cap.

3.4 REMOVAL OF IMPROVEMENTS

A. Remove existing above-grade and below-grade improvements necessary to permit placement of soil cover system and other work as indicated. Abandonment and/or removal of designated underground piping/conduit interfering with construction is included under this section, unless specified elsewhere.

3.5 DISPOSAL

A. Burning is NOT permitted.

B. All turf, trees, roots, stumps, and debris, and other material deemed unsuitable for construction shall be stockpiled. Within fifteen calendar (15) days of stockpiling, all unsuitable material shall be disposed of off-site at the Contractor's expense.

C. No stumps or other debris shall be felled, sidecast, or placed outside the project limits.

END OF SECTION 02110

SECTION 02112 TREE PROTECTION AND TRIMMING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes trimming and protection of trees that are indicated to remain but interfere with or are close to new construction, as herein specified. Trees which are to remain and must be protected are indicated on the Drawings.

1.2 SUBMITTALS

A. Certification: Submit written certification by qualified arborist that trees indicated to remain have been protected during the course of construction in accordance with recognized standards and that where damage did occur, trees were promptly and properly treated. Indicate which damaged trees (if any) are incapable of retaining full growth potential and are recommended to be removed or replaced.

1.3 QUALITY ASSURANCE

A. Arborist Qualifications: Engage a qualified arborist who has successfully completed tree protection and trimming, to perform the following work:

1. Remove branches from trees that are to remain, if required.

2. Recommend procedures to compensate for loss of roots and perform initial pruning of branches and stimulation of root growth where removed to accommodate new construction.

3. Recommend procedures for excavation and grading work juxtaposed to established plants.

4. Perform tree repair work for damage incurred by new construction.

1.4 PROJECT CONDITIONS

A. Temporary Protections: Provide temporary fencing, barricades, or other suitable guards located outside drip-line (outer perimeter of branches) to protect trees and other plants that are to remain from damage.

B. Protect root systems: Do not store construction materials, debris, or excavated material within drip line of trees to remain. Do not permit vehicles within drip line. Restrict foot traffic to prevent excessive compaction of soil over root systems within drip line. All excavations activities within drip line of trees shall be completed using hand tools to minimize damage to existing root systems.

PART 2 - PRODUCTS (Not Applicable)

2.1 MATERIALS

A. Drainage Fill: Selected stone or gravel, graded to pass a 3-inch sieve and retained on a 1-inch sieve.

B. Demarcation Layer: As specified in Division 2, section "Geotextile Fabric – Demarcation Layer."

C. Topsoil: New topsoil is specified in Division 2 section, "Topsoil."

D. Fertilizer:

1. Bonemeal - Commercial, steamed finely ground material with a minimum of 1.0 percent nitrogen and a minimum of 11 percent phosphoric acid.

2. Commercial Fertilizer (10-6-4) - Containing not less than 10 percent nitrogen, 6 percent available phosphoric acid and 4 percent water soluble potash.

E. Top Mulch: 3" garden bark.

F. Water: Clean, Potable

PART 3 - EXECUTION

3.1 GENERAL

A. Protect tree root systems from damage due to noxious materials caused by run-off or spillage during mixing, placement, or storage of construction materials. Protect root systems from flooding, eroding, or excessive wetting resulting from dewatering operations.

B. Do not allow fires under or adjacent to trees or other plants that are to remain.

3.2 EXCAVATION AROUND TREES

A. Excavate within proximity of trees only where indicated. Do not machine excavate within drip-line.

B. Where excavating for new construction is required within drip line of trees, hand excavate to minimize damage to root systems. Provide sheeting at excavations if required. Use narrow-tine spading forks and comb soil to expose roots.

1. Relocate roots in backfill areas wherever possible. If large, main lateral roots are encountered, expose beyond excavation limits as required to bend and relocate without breaking. If encountered immediately adjacent to location of new construction and relocation is not practical, cut roots approximately 3 inches back from new construction.

C. Where hand excavating around trees designated to remain to facilitate the installation of demarcation geotextile, topsoil and mulch, no more than 10 percent of the root mass shall be exposed at any time. The Contractor shall be responsible for maintaining the stability of the tree during excavations activities. All exposed root systems shall be backfilled at the end of each work day.

D. Do not allow exposed roots to dry out before permanent backfill is placed; provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in moist condition and temporarily support and protect from damage until permanently relocated and covered with earth.

E. Where trenching for utilities is required within drip line, tunnel under or around roots by hand digging. Do not cut main lateral roots or tap roots; cut only smaller roots that interfere with installation of new work. Cut roots with sharp pruning instruments; do not break or chop.

F. Prune branches to balance loss to root system caused by damage or cutting of root system.

3.3 GRADING AND FILLING AROUND TREES

A. Maintain existing grade within drip-line of trees to the extent practical. Where the final grade around a tree designated to remain is raised, the material placed above the original grade shall consist of bark mulch only. Hand excavation around the root system may be required as shown on the Drawings.

B. Minor Fills: Where existing grade is 4 inches or less below elevation of finish grade shown, use topsoil fill material and mulch as specified. Place in topsoil single layer and do not compact; hand grade to required finish elevations. Mulch shall also be placed in a single layer that is not compacted.

3.4 REPAIR AND REPLACEMENT OF TREES

A. Repair trees damaged by construction operations. Make repairs promptly after damage occurs to prevent progressive deterioration of damaged trees.

B. Remove and replace dead and damaged trees that arborist determines to be incapable of restoration to normal growth pattern.

1. If trees over 6 inches in caliper measurement (taken 12 inches above grade) are required to be replaced, provide new trees of 6-inch caliper size and of species selected by the Engineer.

3.5 DISPOSAL

A. Burning on Owner's property of removed trees and branches is not permitted on site.

B. Removal from Owner's Property: Remove excess excavation, displaced trees, and trimmings and dispose of off Owner's property within fifteen (15) days of stockpiling. Do not sidecast or place stumps or debris outside the project limits.

END OF SECTION 02122

SECTION 02140 DEWATERING

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes furnishing, installing, and maintaining a dewatering system to continuously lower and control groundwater levels and hydrostatic pressures in order to maintain near-dry conditions for construction of the work as shown on the plans and specified herein.

1.2 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Description: of proposed dewatering system.

C. Layout: of dewatering system, including location of sumps, deep wells, well points, header pipes, pumps, discharge lines and observation wells.

D. Details: of dewatering system, including installation methods for deep wells, well points and observation wells, depths of wells, material descriptions, pipe sizes, intake screen sizes, and pump capacities.

E. Estimate: of time required to lower groundwater levels after start of pumping.

1.3 JOB CONDITIONS

A. Site soil boring data and samples, soil laboratory testing, and any soil reports shall be made available to prospective bidders for study and review. Bidders must make their own interpretation of subsurface conditions that may affect methods or the cost of construction of the Work.

PART 2 - PRODUCTS

2.1 DEWATERING SYSTEM

A. Provide a dewatering system of adequate size and capacity to lower and maintain the groundwater at the specified level. The system shall include standby pumps and power source for continuous operation.

1. Dewatering system shall consist of wellpoints, deep wells, cut-off walls, riser pipes, swing joints, header lines, valves, pumps, discharge lines, and all other necessary fittings, accessories and equipment for a complete operating system. Provide hole punches, sand backfill and clay plugs as required by soil conditions.

B. Observation Wellpoints: Provide groundwater reading wells or piezometers to monitor the groundwater level, as indicated on the approved Shop Drawings or as directed by the Engineer.

C. Sand: Clean concrete sand conforming to ASTM C 33.

PART 3 - EXECUTION

3.1 PREPARATION

A. Install the observation well points at locations indicated on approved Shop Drawings or where directed by the Engineer. Install observation wellpoints in accordance with manufacturer's printed instructions and in accordance with approved Shop Drawings. Provide sand backfill around wellpoint. Test each observation wellpoint to verify that the installation is performing properly.

B. Protect observation well standpipes from damage by construction operations and maintain accessibility to them. Maintain reading wells until groundwater is allowed to return to its normal level.

3.2 INSTALLATION

A. Install the dewatering system in accordance with approved Shop Drawings and as required by site conditions. Locate elements of the system to allow a continuous dewatering operation without interfering with the installation of any permanent project Work. The dewatering system shall be installed after the site preload is in place.

3.3 OPERATION

A. Keep the system in continuous operation from the time excavation is started in the dewatering area (or before if required by site conditions to lower the groundwater to the elevations specified) until the time backfilling is completed at least 2 feet above the normal groundwater level.

1. Do not discontinue dewatering operations without specific approval from the Engineer.

2. Rates of groundwater withdrawal during dewatering operations, shall at all times be below the rate at which soil particles are removed from the existing soils.

B. In the event excavation proceeds subsequent to dewatering as specified above, and the groundwater level is found to be within two feet of the excavation, the dewatering Contractor shall immediately continue to dewater as specified herein, including, but not limited to, additional dewatering and monitoring facilities, at no additional cost to the Owner. The excavation shall not be allowed to proceed below groundwater.

3.4 FIELD CONTROL

A. Maintain a careful check to detect any settlement in existing adjacent Work. Notify the Engineer of any signs of settlement. Establish settlement point bench marks and take periodic readings as directed. The Contractor shall take all such precautions and do any and all Work necessary to protect the stability and integrity of adjacent lands, pavements, buildings and utilities from settlement or other movement that may be caused by his dewatering operations. The Contractor shall be solely responsible for any damage or injury to adjacent lands, pavements, buildings, or utilities caused by his dewatering or other operations or his failure to use corrective or preventive procedures or methods.

B. Take and record measurements of the groundwater in each reading and pumping well periodically and when directed by the Engineer.

3.5 DISCHARGE

A. All water removed from the excavations shall be collected and treated prior to discharge in accordance with Section 02221 "Site Management Plan".

B. Convey water from the excavation in a closed conduit. Do not use trench excavations as temporary drainage ditches.

C. Dispose of all treated water or water not requiring additional treatment based upon sampling and testing in such a manner as not to endanger public health, property, or any portion of the Work under construction or completed.

D. Disposal of treated water shall be approved by the Engineer and shall not cause erosion or sedimentation to occur in existing drainage systems. All sedimentation or blocking of existing systems shall be thoroughly cleaned and returned to original condition by the Contractor, at his expense.

E. Provide approved sediment traps when water is conveyed into water courses.

3.6 REMOVAL

A. When system is no longer required, gradually decrease the pumping rate until the water table resumes its natural position so that the velocity of the returning groundwater will be low enough as not to carry fines with it.

B. When the dewatering system is no longer required and when directed by the Engineer, dismantle and remove the system and all appurtenances from the site.

C. Equipment that has been in contact with contaminated media or potentially contaminated media shall be properly decontaminated in accordance with the Section 02221 "Site Management Plan".

END OF SECTION 02140

SECTION 02151 SHORING (SHORELINE WORK)

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Work included: Provide shoring, temporary or permanent, at excavations and elsewhere as required to protect workmen, materials, other properties, and the public.

1. The Contractor is solely responsible for means and methods of construction and for the sequences and procedures to be used.

1.2 QUALTIY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.

B. Retain a qualified engineer, properly permitted to provide such services at the location of the Work, to design the shoring system and to inspect and report on the quality of its construction.

C. Comply with pertinent requirements of governmental agencies having jurisdiction.

D. Coordinate the shoring design and construction with:

1. Soil investigation report prepared for this Work.
2. Structural systems and sequence of construction established for the Work.

1.3 SUBMITTALS

A. Prior to submitting shoring design for approval of governmental agencies having jurisdiction, submit the design to the Engineer for review. Include supporting calculations.

1. The Engineer's review will not relieve the Contractor of his responsibilities under the Contract.

2. Should changes in the shoring design be required subsequent to the Engineer's review, coordinate all such changes with the Engineer.

B. Upon completion of construction of this portion of the Work, submit to the Engineer two copies of a letter signed by the approved shoring design engineer stating that, to the best of the shoring design engineer's knowledge, the shoring system was constructed in accordance with the arrangement reviewed by the Engineer.

PART 2 - PRODUCTS

2.1 DESIGN

A. Design a shoring system which will safely and adequately prevent collapse of new and existing structures, and parts thereof, which will permit construction of the Work to the arrangement and tolerances required under the Contract Documents.

B. Secure all needed approvals, including those of governmental agencies having jurisdiction and of adjacent property owners if required, at no additional cost to the Owner.

2.2 MATERIALS

A. Provide any and all materials required for execution of the approved shoring system.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which Work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Construct and install the shoring system in strict accordance with the design approved by the governmental agencies having jurisdiction, and in strict accordance with the space arrangement reviewed by the Engineer.

3.3 TEMPORARY SHORING

A. All shoring shall be considered temporary, unless specifically designated as permanent by the Contract Documents or the Engineer. Temporary shoring shall comply with the provisions of Section 01500 for temporary work.

3.4 PERMANENT SHORING

A. In some cases, shoring may remain in place, as designated in the Contract Documents or by the Engineer. Permanent shoring shall not negatively affect the performance of the completed Work or anticipated future work. The Contractor shall secure the Engineer's review prior to covering permanent shoring. Permanent shoring shall become concealed upon the completed Work.

END OF SECTION 02151

SECTION 02160 EXCAVATION SUPPORT SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. The purpose of this work is to insure the safety of workmen, the public, and structures and utilities exposed to the hazard of falling or sliding material. It shall be the Contractor's sole responsibility to provide protection adequate for this purpose. Details of this sheeting must conform with the requirements of Title 29 Code of Federal Regulations, Part 1926, Safety and Health Regulations for Construction (OSHA). The Engineer shall reserve the right to increase the minimum requirements set forth therein, depending on the hazard.

B. This Section includes, but is not limited to, the following:

1. Shoring and bracing necessary to protect existing buildings, streets, walkways, utilities, and other improvements and excavation against loss of ground or caving embankments.

2. Maintenance of shoring and bracing.

3. Removal of shoring and bracing, as required.

C. Types of shoring and bracing systems include, but are not limited to, the following:

1. Steel H-section (soldier) piles.
2. Timber lagging.
3. Steel sheet piles.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

1. Layout drawings for excavation support system and other data prepared by, or under the supervision of, a qualified professional engineer. System design and calculations must be acceptable to local authorities having jurisdiction.

1.4 QUALITY ASSURANCE

A. Engineer Qualifications: A professional engineer legally authorized to practice in jurisdiction where Project is located, and experienced in providing successful engineering services for excavation support systems similar in extent required for this Project.

B. Supervision: Engage and assign supervision of excavation support system to a qualified professional engineer foundation consultant.

1. Submit name of engaged consultant and qualifying technical experience.

C. Regulations: Comply with codes and ordinances of governing authorities having jurisdiction.

1.5 JOB CONDITIONS

A. Before starting work, verify governing dimensions and elevations. Verify condition of adjoining properties. Take photographs to record any existing settlement or cracking of structures, pavements, and other improvements. Prepare a list of such damages, verified by dated photographs, and signed by Contractor and others conducting investigation.

B. Survey adjacent structures and improvements, employing qualified professional engineer, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

C. During excavation, resurvey benchmarks weekly, maintaining accurate log of surveyed elevations for comparison with original elevations. Promptly notify Architect if changes in elevations occur or if cracks, sags, or other damage is evident.

1.6 EXISTING UTILITIES

A. Protect existing active sewer, water, gas, electricity and other utility services and structures.

B. Notify municipal agencies and service utility companies having jurisdiction. Comply with requirements of governing authorities and agencies for protection, relocation, removal, and discontinuing of services.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide adequate shoring and bracing materials which will support loads imposed. Materials need not be new, but should be in serviceable condition. The selection of shoring and bracing materials shall be the Contractor's option. The Engineer may, at his discretion, disapprove and reject materials which he regards to be unsound or not in conformance with Title 29 Code of Federal Regulations, Part 1926, Safety and Health Regulations for Construction (OSHA).

B. Structural Steel: ASTM A 36.

C. Steel Sheet Piles: ASTM A 328.

D. Timber Lagging: Any species, rough-cut, mixed hardwood, nominal 3 inches thick, unless otherwise indicated.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which Work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION – GENERAL REQUIREMENTS

A. In general, this item will be required wherever an excavation exceeds five feet in depth and the side slopes are not laid back to a safe gradient as set forth in Title 29 Code of Federal Requirements, Part 1926, Safety and Health Regulations for Construction (OSHA).

3.3 SHEET PILING

A. Sheet piling or excavation support systems shall be installed where ordered by the Engineer.

B. Sheet piling installed under this item shall be tight or continuous, except where skeleton sheet piling is permitted under Title 29 Code of Federal Regulations, Part 1926, Safety and Health Regulations for Construction (OSHA). Skeleton sheeting shall be considered as any sheeting other than tight or continuous sheeting.

C. Sheet piling for this item shall be of adequate cross section and adequately braced.

D. In areas where sheet piling is to be installed, contractor shall advance a pilot trench ahead of the sheet pile driving operation, the purpose of which is to locate subsurface structures and utilities. Contractor shall be responsible for the cost of repairing and subsurface structures or utilities damage due to advancement of the pilot trench, sheet piling, or other construction activities.

E. Maintain sheeting until excavations are backfilled and the piles are no longer supporting lateral earth and hydrostatic pressures. Remove sheeting in stages to avoid the disturbance of underlying soils and damage to structures, pavements, facilities, and utilities.

3.4 SHORING

A. Wherever shoring is required, locate the system to clear permanent construction and to permit forming and finishing of concrete surfaces. Provide shoring system adequately anchored and braced to resist earth and hydrostatic pressures.

B. Shoring systems retaining earth on which the support or stability of existing structures is dependent must be left in place at completion of work.

3.5 BRACING

A. Locate bracing to clear columns, floor framing construction, and other permanent work. If necessary to move a brace, install new bracing prior to removal of original brace.

B. Do not place bracing where it will be cast into or included in permanent concrete work, except as otherwise acceptable to Architect.

C. Install internal bracing, if required, to prevent spreading or distortion of braced frames.

D. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

E. Remove sheeting, shoring, and bracing in stages to avoid disturbance to underlying soils and damage to structures, pavements, facilities, and utilities.

F. Repair or replace, as acceptable to Architect, adjacent work damaged or displaced through installation or removal of shoring and bracing work.

END OF SECTION 02160

SECTION 02200 EARTHWORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to, the preparation of the site, protection, excavation, embankment, drainage, dewatering, for site grading, as shown on the Drawings, and as herein specified.

B. The Contractor shall accept the site in the condition in which it exists at the time of the award of the Contract.

C. The Engineer shall determine the suitability of materials that are to be used in the work and should any materials encountered be unsatisfactory for the purpose intended, they shall be removed from the site at the Contractor's expense.

1.2 QUALITY ASSURANCE

A. Reference Standards:

1. The latest edition of the following standards, as referenced herein, shall be applicable.

a. "Standard Specifications, Construction and Materials, New York State Department of Transportation, Office of Engineering."

b. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)."

B. The Contractor shall comply with the requirements for soil erosion and sedimentation control, and other requirements of governmental authorities having jurisdiction, including the State of New York.

C. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of soils and aggregate with the specifications in accordance with Section 1400- "Quality Requirements."

1.3 SUBMITTALS

A. Samples:

1. The Contractor shall furnish earth materials to the testing laboratory for analysis and report, as directed by the Engineer, or as outlined in the specifications.

B. Test Results:

1. The testing laboratory shall submit written reports of all tests, investigations, and recommendations to the Contractor and the Engineer.

1.4 PROJECT REQUIREMENTS

A. All excavations shall be completed in accordance with Section 02221 "Site Management Plan".

B. Notify the Engineer of any unexpected subsurface condition.

C. Protection of Existing Utilities:

1. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate support and protection during earthwork operations, comply with OSHA requirements.

2. Coordinate interruption and/or termination of utilities with the utility companies and the Owner.

3. Provide a minimum of forty-eight (48) hours notice to the Owner and receive written notice to proceed before interrupting any utility.

4. Demolish and completely remove from the site any existing underground utilities designated to be removed as shown on the Drawings or as specified in Section 02110 "Clearing and Grubbing."

5. Repair any damaged utilities as acceptable to the Engineer, at no additional cost to the Owner.

D. Protection of Persons and Property:

1. Barricade open excavations occurring as part of this work, and post with warning lights.

2. Operate warning lights as recommended by authorities having jurisdiction.

3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

4. Perform excavation within drip-line of large trees to remain by hand, and protect the root system from damage or dry out to the greatest extent possible. Maintain moist conditions for root system and cover exposed roots with burlap. Paint root cuts of 1" diameter and larger with emulsified asphalt tree paint.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Select Granular Material: Sound, durable, sand, gravel, stone, or blends with these materials, free from organic, frozen, or other deleterious materials, conforming to the requirements of NYSDOT Section 304 and meeting the following gradation requirements (NYSDOT Type 4):

Sieve	Percent Passing
2"	100
1/4"	30 - 65
No. 40	5 - 40
No. 200	0 - 10

B. Selected Fill: Sound, durable, sand, gravel, stone, or blends of these materials, free from organic, frozen or other deleterious materials.

Sieve	Percent Passing
4"	100
No. 40	0 – 70
No. 200	0 – 10

1. Fines passing No. 200 shall be non-plastic.
2. Particle size analysis shall show no gap grading.

C. Crushed Recycled Concrete: Sound, durable, crushed recycled concrete materials, free from organic, frozen or other deleterious materials and gross petroleum contamination. Crushed recycled concrete materials shall conform to the following gradation specification:

Sieve	Percent Passing
1-1/2"	100
3/4"	40-75
1/4"	25-50
No. 40	5-20
No. 200	0 - 10

D. Other On-Site Soils: On-site soil materials not deemed grossly-contaminated by the Engineer or the New York State Department of Environmental Conservation and meeting the requirements of "Selected Fill" shall be stockpiled on the project site and reused as backfill to the extent possible. Stockpiled soil excavated from the project site will not be permitted as fill material in utility trenches or beneath the footprint of the proposed future buildings.

PART 3 - EXECUTION

3.1 PRECONSTRUCTION MATERIAL QUALIFICATION TESTING

A. A 100-pound minimum representative sample shall be obtained from each potential borrow source. If different material gradations are known to exist in the pit, samples shall be obtained for each material. Each sample shall be mixed thoroughly and reduced to test specimen size, in accordance with AASHTO T87. The test shall be performed in the order shown. Failure to pass any test is grounds for disqualification and shall lead to cessation of the test program for that material.

1. Particle Size Analysis:

   a. Method: ASTM D422.
   b. Number of Tests: One (1) per potential source.
   c. Acceptance Criteria: Gradation within specified limits.

2. Maximum Density Determination:

   a. Method: ASTM D698, Standard Proctor.
   b. Number of Tests: One (1) per potential source.

3. Re-establish gradation and maximum density of fill material if source is changed during construction.

B. All off-site borrow/imported fill soils will be from a documented source of "virgin" soil or from off-site borrow soils meeting the guidance values and requirements established in the New York State Department of Environmental Conservation's (NYSDEC's) Technical & Administrative Guidance Memorandum (TAGM) 4046.

1. Virgin Soil Materials: If the Contractor designates a source as "virgin" soil, written documentation shall be provided to the Owner and Engineer to document that the soil is native material from areas not having supported any known prior industrial or commercial development or agricultural use. Additionally, one composite sample prepared from at least five equally sized sub-samples will be collected for every 5,000 cubic yards of material. Each sample will be analyzed for Target Compound List (TCL) of volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and cyanide. The soil will be considered acceptable for use as backfill provided that all parameters are below the recommended soil cleanup objective concentrations specified in NYSDEC's TAGM 4046.

2. Non-Virgin Soil Materials: Off-site borrow soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products. The materials cannot be defined as solid waste in accordance with 6 NYCRR Part 360-1.2(a) and must be free of deleterious and organic materials. Non-virgin soils will be tested via the collection of composites sample prepared from at least five equally sub-samples each and analyzed for the Target Compound List (TCL) of volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and cyanide. The soil will be considered acceptable for use as backfill provided that all parameters are below the recommended soil cleanup objective concentrations specified in NYSDEC's TAGM 4046.

   The sampling frequency for non-virgin soils will be one composite sample per 500 cubic yards of materials borrowed from each source areas. If more than 1,000 cubic yards of soil are borrowed form a given off-site source, and both samples from the first 1,000 cubic yards meets the TAGM 4046 concentrations, the sample collection frequency will be reduced to one sample for every 2,500 cubic yards of additional soils from the same source up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, the sampling frequency may be reduced to one sample per every 5,000 cubic yards, provide that the early samples met all TAGM 4046 recommended soil cleanup concentrations.

3.2 PREPARATION

A. Establish required lines, levels, contours and datum.

B. Maintain benchmarks and other elevation control points. Re-establish, if disturbed or destroyed, at no additional cost to the Owner.

C. Establish location and extent of utilities before commencement of grading operations.

3.3 EXCAVATION

A. Excavation shall consist, in general, of the excavation of whatever substance is encountered to the lines, grades and sections shown on the Drawings, including excavation as necessary for grading and other similar features.

B. Unless required by the New York State Department of Environmental Conservation or the Engineer, the excavations will generally not extend into the saturated zone and deeper excavations will be conducted during low tide conditions.

C. During construction, the grading operations shall be executed in such a manner that the excavation will be well drained at all times. All grading shall be finished on neat, regular lines conforming to the sections and contours shown on the Plans.

D. Removal of materials beyond the indicated subgrade elevations, without authorization by the Engineer, shall be classified as unauthorized excavation and shall be performed at no additional cost to the Owner.

E. Excavation shall be performed in proper sequence with all other associated operations.

F. Maintain the slopes of excavation in a safe condition until completion of the grading operation.

G. All excavation work shall be inspected and approved by the Engineer before proceeding with construction.

H. Any excess excavation shall be removed from the site to disposal areas at the Contractor's expense.

3.4 FILL

A. All site fill shall be "selected fill" unless otherwise shown on the Drawings, or directed by the Engineer. "Select granular fill" shall be placed in lieu of selected fill where directed by the Engineer.

B. Before depositing fills, the surface of the ground shall be cleared of all refuse, brush and large stones. Conform to Section 02110 "Clearing and Grubbing." All grass and brush shall be mowed to a maximum height of four (4) inches.

C. Prior to placing fill over undistributed material, scarify to a minimum depth of six (6) inches.

D. Where fills are made on hillsides or slopes, the slope of the original ground upon which the fill is to be placed shall be plowed or scarified deeply or where the slope ratio of the original ground is steeper than 2 horizontal to 1 vertical, the bank shall be stepped or benched.

E. The original ground shall be proof rolled until the underlying soil is thoroughly compacted to the satisfaction of the Engineer before any filling is begun. A steel-wheel tandem roller weighing 8 to 10 tons or equipment capable of obtaining the same effort shall be used to obtain a thoroughly compacted subgrade. Remove or recompact any soft or loose soils as determined by the Engineer prior to filling.

F. A thoroughly and satisfactorily subgrade is defined as having a minimum dry density of 95 percent of the maximum density of the material used. The subgrade material shall be compacted at a moisture content suitable for obtaining the required density.

G. Place backfill and fill materials in layers not more than 12" in loose depth unless shown otherwise on the Drawings. Lift height shall be governed by the ability of the compaction equipment to obtain the required compaction with 12" as a maximum lift height. Before compaction, moisten or aerate each layer as necessary to facilitate compaction to the required density. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost, ice, ponded water or extraneous debris.

H. When work is suspended during periods of freezing weather, measures shall be taken to prevent fill already in place from freezing. Upon resumption of work after any inclement weather, prepare the exposed surface by proof rolling to identify any zones of soft/loose soils. Soft/loose materials or frozen soils shall be removed and replaced by compacted granular fill.

I. Moisture Control:

1. Where fill or backfill must be moisture conditioned before compaction, uniformly apply water to the surface and to each layer of fill or backfill. Prevent ponding or other free water on surface subsequent to, or during, compaction operations.

2. Remove and replace, or scarify and air dry, soil that is too wet to permit compaction to specified density. Soil that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing, until moisture content is reduced to a value which will permit compaction to the percentage of maximum density specified.

J. All fill shall be thoroughly and satisfactorily compacted to 95 percent of the maximum density of material used.

3.5 GRADING

A. The present and finished grade lines are shown on the contract drawings. Grade over the entire area, as shown on the drawings, shall be to the finished subgrade levels. Upon completion of this work, all debris shall be cleaned out and removed from the premises.

B. Sufficient grading must be done during the progress of the work so that the entire site shall be well drained and free from water pockets.

C. Finish grading, including dressing swales, disposing of excess material and all other work necessary to prepare the site for topsoil and seeding shall be done after all excavation and backfilling operations are complete.

3.6 COMPACTION EQUIPMENT

A. Compaction equipment used for the Work is subject to approval by the Engineer. Any equipment not originally manufactured for compaction purposes and equipment which is not in proper working order will not be approved. Furnish manufacturer's specifications covering data not obvious from a visual inspection of the equipment and necessary to determine its classification and performance characteristics.

B. Vibratory Drum Compactors: A self-propelled compactor classified for use according to the developed compactive force rating per linear inch of drum width (PLI). The actual operating frequency of the compactor will determine the PLI rating. Compute the PLI in accordance with the applicable portions of NYSDOT Section 203-3.12 in paragraph B.

1. Approval of vibratory compactors usage is contingent upon proper operation of equipment at all times during compaction operations.

2. Compaction equipment other than vibratory drum compactors may be used subject to the approval of the Owner's Representative. Submit specifications at least 2 weeks prior to use of this equipment.

3.7 DRAINAGE AND DEWATERING

A. Prevent surface, subsurface or ground water from flowing into excavation and from flooding project area, as well as surrounding areas.

B. Do not allow water to accumulate in excavations. Remove water to prevent soil changes detrimental to the stability of subgrades in accordance with the Section 02221 "Site Management Plan".

C. Provide and maintain the pumps, well points, sumps, suction and discharge lines, and other dewatering components necessary to convey water away from excavations.

D. Provide and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations by dewatering, to collection or run-off areas.

E. Dewatering operations shall be as directed by the Engineer and performed in accordance with Section 02140 "Dewatering."

3.8 FIELD QUALITY CONTROL

A. Notify the Engineer at least one (1) working day in advance of all phases of filling and backfilling operations.

B. Compaction testing shall be performed to ascertain the compacted density of the fill and backfill materials in accordance with the following methods:

1. In-place relative density:

a. Method: AASHTO T191, Sand Cone Method
AASHTO T238, Nuclear Method

b. Number of Tests: six (6) per acre per 12" vertical lift.

C. The Engineer may direct additional tests to establish gradation, maximum density, and in-place density as required by working conditions, at the Contractor's expense.

D. Acceptance Criteria: The sole criterion for acceptability of in-place fill shall be in situ dry density. Minimum dry density for all fill or backfill shall be 95 percent of the maximum dry density. If a test fails to qualify, the fill shall be further compacted and re-tested. Subsequent test failures shall be followed by removal and replacement of the material.

3.9 CLEAN UP

A. Provide and maintain protections or newly filled areas against damage. Upon completion or when directed, correct all damaged and deficient work by building up low spots and remove temporary protections, fencing, shoring and bracing.

B. Remove all surplus excavated material not required for filling and backfilling and legally dispose of same away from premises.

C. Leave the premises and work in clean, satisfactory condition, ready to receive subsequent operations.

END OF SECTION 02200

SECTION 02208 - SOIL COVER LAYER

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to, furnishing, placing, compacting and testing the soil cover layer as shown on the Contract Drawings and as specified herein.

B. The Contractor shall accept the site in the condition in which it exists at the time of the award of the Contract.

C. The Engineer will determine the suitability of materials that are to be used in the work and should any materials encountered be unsatisfactory for the purpose intended, they shall be removed from the site at the Contractor's expense.

1.2 QUALITY ASSURANCE

A. The latest edition of the following standards and regulations, as referenced herein, shall be applicable.

1. American Society for Testing and Materials (ASTM).

2. Standard Specification for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO).

B. The Contractor shall comply with the requirements for soil erosion and sedimentation control, and other requirements of governmental authorities having jurisdiction, including the State of New York.

C. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of soils with the specifications, in accordance with Section 01400 - "Quality Requirements."

1.3 SUBMITTALS

A. The Contractor shall furnish representative earth materials to the testing laboratory for analysis and report, as directed by the Engineer or as outlined in the specifications.

B. Descriptive information on compaction equipment to be used for construction of the soil cover layer, including equipment proposed for use in confined areas.

C. Plan detailing proposed borrow source, borrow source prequalification testing data, and estimated borrow source quantity. A copy of the NYSDEC mining permit for the borrow source shall be included in the plan.

D. Schedule of placement.

E. Test reports for prequalification, construction quality control/quality assurance testing, and environmental testing shall be submitted to both the Contractor and the Engineer.

1.4 PRODUCT HANDLING

A. Soil materials shall be excavated from the borrow source, transported, conditioned, placed, and stockpiled in such a manner so as to prevent contamination, segregation, and excessive wetting. Materials that have become contaminated, excessively wet, or segregated shall not be used and shall be removed from the site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Select fill (for use in soil cover layer): Sound, durable, sand, gravel, stone, or blends of these materials, free from organic, frozen or other deleterious materials, conforming to the following gradation requirements:

Sieve	Percent Passing
2"	100
No. 40	10 - 70
No. 200	0 - 10

1. Fines passing No. 200 sieve shall be non-plastic.
2. Particle size analysis shall show no gap grading.

*Maximum particle size of material shall be classified as sub-rounded to well-rounded.

PART 3 - EXECUTION

3.1 BORROW SOIL PRECONSTRUCTION MATERIAL QUALIFICATION TESTING

A. General:

1. Sufficient size samples shall be obtained from the potential borrow source to allow completion of tests listed in paragraph B below. Samples may be obtained from test borings, test pits, or from borrow pit faces provided that surficial dry or wet soil is removed to expose undisturbed earth. Tests listed below shall be performed on each sample obtained. A minimum of three (3) representative samples from each potential borrow source shall be furnished to the testing laboratory for prequalification testing. Test data shall be provided to the Engineer a minimum of 2 weeks prior to start of soil cover layer construction for approval of borrow source.

B. Material Tests:

1. Particle Size Analysis:

   a. Method: ASTM D422
   b. Number of Tests: One (1) per sample; three (3) per potential source.
   c. Acceptance Criteria: Gradation within specified limits.

2. Atterberg Limits Determinations:

   a. Method: ASTM D4318
   b. Number of Tests: One (1) per sample; three (3) per potential source.
   c. Acceptance Criteria: Plasticity index within specified limits.

3. Moisture Content:

   a. Method: ASTM D2216

   b. Number of Tests: One (1) per sample; three (3) per potential source. Test shall be performed on sample specimen preserved at natural (undisturbed) moisture condition.

4. Maximum Density Determination:

   a. Method: ASTM D698 - Standard Proctor
   b. Number of Tests: One (1) per sample, equaling three (3) per potential source.

5. All soil cover material shall be imported from a "virgin" soil borrow source. Written documentation shall be provided to the Owner and Engineer to document that the soil is native material from areas not having supported any known prior industrial or commercial development or agricultural use.

C. Environmental Testing: The soil utilized for the soil cover system shall by certified and sampled at the frequency specified in Section 02200.3.1.

3.2 PLACEMENT AND COMPACTION

A. General:

1. Remove or recompact any soft or loose soils as determined by the Engineer prior to filling.

2. Do not place fill material on surfaces that are muddy, frozen, or contain frost, ice, ponded water or extraneous debris.

3. When work is suspended during periods of freezing weather, measures shall be taken to prevent fill already in place from freezing. Upon resumption of work after any inclement weather, prepare the exposed surface by proof rolling to identify any zones of soft/loose soils. Soft/loose materials or frozen soils shall be removed and replaced.

4. The distribution of materials throughout the soil cover layer shall be such that the layer will be free from lenses, pockets, streaks, and layers of materials differing substantially from the surrounding materials.

5. The placing of material shall be done so as to obtain a layer of uniform thickness without spaces between successively deposited loads.

6. Compaction of each layer shall proceed in a systematic, orderly, and continuous manner so as to ensure the specified coverages by the compaction equipment.

7. Materials which cannot be compacted by the approved rolling compaction equipment because of interferences shall be compacted with smaller approved compactors to a density at least equal to the density achieved in adjacent areas by the rolling compaction equipment and methods. Single pad vibratory base plate compactors shall weigh not less than 200 lbs. and have a vibration frequency not less than 1600 cycles per minute.

8. Should the fill surface become rutted or uneven subsequent to compaction, it shall be releveled and recompacted before placing the next layer of material.

B. Soil Cover Layer Placement and Compaction:

1. Place fill material in layers not more than 12" in depth. Lift height shall be governed by the ability of the compaction equipment to obtain the required compaction with 12" as a maximum lift height.

2. Moisture content of the material during compaction shall be between 3 percent dry and 3 percent wet of optimum moisture content as determined by ASTM D 698 (Standard Proctor).

3. All fill shall be thoroughly and satisfactorily compacted to at least 95 percent of the standard Proctor maximum dry density of the material used (ASTM D-698).

4. Where fill must be moisture conditioned before compaction, uniformly apply water to the surface of each layer of fill. Prevent ponding or other free water on the surface subsequent to, or during, compaction operations.

5. Remove and replace, or scarify and air dry, soil that is too wet to permit compaction to the specified density. Soil that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing, until moisture content is reduced to a value which will permit compaction to the percentage of maximum density specified.

6. Rolling compaction equipment shall be heavy smooth drum vibratory equipment capable of achieving the intended result. Any equipment not originally manufactured for compaction purposes and equipment which is not in proper working order will not be approved. Furnish manufacturer's specifications covering data not obvious from a visual inspection of the equipment and necessary to determine its classification and performance characteristics.

7. Compaction equipment shall make a minimum of 4 complete passes over the entire area of each lift.

8. The Contractor shall grade partially completed fill areas for drainage and thoroughly compact and smooth the surface at the end of each workday.

9. For areas not accessible to heavy rolling compaction equipment, fill materials shall be placed in horizontal layers not to exceed 6 inches in loose thickness and compacted with smaller rolling compaction equipment or hand operated equipment, as approved by the Engineer.

10. The final surface of the soil cover layer shall be uniform and suitable for placement of the next subsequent layer.

3.3 FIELD QUALITY CONTROL

A. The Contractor's Testing Laboratory shall perform testing of soil cover layer fill materials to insure compliance with these specifications in accordance with Section 01400 "Quality Requirements."

B. One particle size analysis (ASTM D422) and one standard Proctor compaction test (ASTM D698) shall be completed for every 5,000 cubic yards of material placed.

C. Tests for moisture content shall be performed on the in-place fill at a rate of nine (9) tests per acre per lift. If nuclear methods or microwave methods are used to determine field moisture content, one oven-dry moisture content determination (ASTM D2216) shall be performed per acre per lift for calibration. Sample shall be obtained from a location immediately adjacent to an in-place density location.

D. In-place density and moisture content tests shall be performed on in- place fill material in accordance with ASTM D 1556, D 2167 or D 2922. In-place density shall be determined at a depth of 6 inches below grade. At least nine (9) tests shall be performed per acre per lift of material placed and at least one (1) test shall be performed each day. Field test locations shall be subject to approval or relocation by the Engineer.

E. The Engineer may direct additional tests to establish gradation, Atterberg limits, permeability, maximum density, in-place density, and water content as required by working conditions, or changes in borrow source material at the Contractor's expense.

F. Acceptance Criteria:

1. Acceptance Criteria: The criteria for acceptability of in-place fill shall be in situ dry density and moisture content. Minimum dry density for all fill shall be 95 percent of the standard Proctor maximum dry density. The in-place moisture content shall be between 3 percent dry and 3 percent wet of optimum as determined by the standard Proctor compaction method (ASTM D-698). If a test fails to qualify, the fill shall be further reworked, compacted and re-tested. Subsequent test failures shall be followed by removal and replacement of the material.

3.4 CLEAN UP

A. Provide and maintain protection of newly filled areas against damage. Upon completion or when directed, correct all damaged and deficient work by building up low spots and remove temporary protections, fencing, shoring and bracing if any.

B. Remove all surplus excavated material not required for filling and backfilling and legally dispose of same away from premises.

C. Leave the premises and work in clean, satisfactory condition, ready to receive subsequent operations.

END OF SECTION 02208

PART 1 - GENERAL

1.1 WORK SPECIFIED

A. Work included: Excavate, backfill, compact, and grade the site to the elevations and limits shown on the Drawings, as specified herein, and as needed to meet the requirements of the construction shown on the Contract Documents.

1.2 SUBMITTALS

A. Submit the pre-qualified list of subcontractors and the proposed schedule of unit prices to the Engineer for review.

B. Submit material gradation, moisture density curve, and representative material sample for each material proposed for use.

C. Test reports environmental testing shall be submitted to both the Contractor and the Engineer.

D. Submit de-watering plan, if de-watering is to be performed. Include proposed intake and discharge location, containment measures for discharge, including details on size, type, and intended location of all components.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General

1. All soil and gravel materials shall be imported from a "virgin" soil borrow source. Written documentation shall be provided to the Owner and Engineer to document that the soil is native material from areas not having supported any known prior industrial or commercial development or agricultural use. Additionally, all imported materials shall be sampled at the frequency specified in Section 02200.3.1.

B. Granular Backfill

1. Where the Drawings indicate "structural fill" material, it shall meet the requirements of granular backfill as described herein. Granular backfill shall consist of crushed stone, crushed gravel, screened gravel or crushed air-cooled blast furnace slag, conforming to the requirements of the New York State Department of Transportation (NYSDOT) Standard Specifications, 2002. All coarse aggregates shall meet the requirements for these materials as outlined in Tables 703-2, "Physical Requirements (Testing)", 703-3, "Physical Requirements (Deleterious Materials)", and 703-4, "Size of Stone, Gravel and Slag". Recycled man-made products such as asphalt and concrete are not acceptable.

2. Crushed stone shall be Material Designation 703-0201 and shall consist of clean, durable, sharp-angled fragments of rock of uniform quality. The crushed stone used as coarse aggregate for all items shall be obtained from sources conforming to the requirements of the NYSDOT as to sampling, testing methods, Quarry Reports and any other required procedures.

1. Crushed gravel shall be Material Designation 703-0202 and shall consist of clean, durable, sharp-angled fragments of gravel free from coatings. A crushed particle shall be defined as one in which the total area of face fracture exceeds 25% of the maximum cross-sectional area of the particle. When two fractured faces are designated, the total area of each fracture face shall exceed 25% of the maximum cross-sectional area of the particle. A naturally fractured face shall be acceptable providing that the sharp angular portion of the particle consists of sound material and is free from unsound or injurious coatings.

2. Screened Gravel shall be Material Designation 703-0203 and shall consist of clean, durable gravel free from coatings. Screened gravel may consist of all uncrushed particles and shall be obtained from sources conforming to the requirements for crushed gravel.

3. Crushed Slag particles shall be Material Designation 703-0204 and shall consist of hard, durable, angular fragments which are reasonably uniform in density and quality; free from injurious amounts of sulphur; and reasonably free from thin, elongated pieces, dirt, or other objectionable matter. All crushed slag shall be obtained from approved sources conforming to the requirements of the NYSDOT as to sampling, test methods and any other required procedures.

4. Gradation: The sizes of all stone, gravel or slag used under these specifications shall conform to the gradation requirements for the various sizes tabulated in Table 703-4. All crushing plants shall be fitted with tailing chutes so that no aggregate will reach the bins other that that which passes through the proper screens.

C. Uncontrolled Fill

1. Uncontrolled fill or borrow material will be accepted for use where the material qualifies under the definition of Suitable Material, Section 203-1.08. Borrow of select granular materials enumerated in Section 203-2.02 shall be accepted subject to meeting the additional provisions contained therein.

D. Pipe Bedding Material

1. This material shall be sand or sandy soil, all of which passes a 3/8" sieve, and not more than ten (10) percent passes a No. 200 sieve. Fill or backfill material shall be deposited in horizontal layers not exceeding 6 inches in thickness prior to compaction. Compaction of each layer shall be as specified under NYSDOT Standard Specification Section 203-3.12, Compaction. A minimum of 95 percent of Standard Proctor Maximum Density will be required. When placing fill or backfill around pipes, layers shall be deposited to progressively bury the pipe to equal depths on both sides. Do not use Reclaimed Asphalt Pavement (RAP). Do not use slab or pieces of either concrete or asphalt.

E. Processed Gravel Surface

1. The gravel shall conform to the following gradation requirements:

Sieve Size	Percent Passing by Weight
2"	100
#4	30-65
#200	10-20

2. And comply with the requirements of Section 411, "Stabilized Gravel Surface Course" of the NYSDOT Standard Specifications, with the additional requirement that recycled man-made products such as asphalt and concrete are not acceptable.

F. Other Materials

1. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the review of the Engineer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General

1. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

2. Use equipment adequate in size, capacity, and numbers to accomplish the work of this Section in a timely manner.

3. In addition to complying with requirements of governmental agencies having jurisdiction, comply with the directions of the Engineer

B. Surface Conditions

1. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

C. Finished Elevations and Lines

1. Comply with Contract Drawings.

D. Procedures

1. Utilities:

a. Unless shown to be removed, protect active utility lines shown on the Drawings or otherwise made known to the Contractor prior to excavating. If damaged, repair or replace at no additional cost to the Owner. The Contractor is responsible for notification of local utilities (Call Before You Dig, Dig Safe, One Call, or equivalent).

b. If active utility lines are encountered, and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted.

c. If service is interrupted as a result of Work under this Section, immediately restore service by repairing the damaged utility at no additional cost to the Owner.

d. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Engineer and secure his instructions.

e. Do not proceed with permanent relocation of utilities until written instructions are received from the Engineer.

2. Protection of persons and property:

   a. Barricade open holes and depressions occurring as part of the Work, and post warning lights on property adjacent to or with public access.

   b. Operate warning lights during hours from dusk to dawn each day and as otherwise required.

   c. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, washout, and other hazards created by operations under this Section.

   d. Provide grounding of equipment.

3. Dewatering of Upland Excavations:

   a. Remove all water, including rain water, encountered during trench and substructure work to an approved location by pumps, drains, and other approved methods.

   b. Keep excavations and site construction area free from water.

   c. Should de-watering systems be employed, discharge effluent to an upland location contained by hay bales, silt fencing or other means of containment acceptable to the Owner.

   d. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

4. Maintain access to adjacent areas at all times.

5. Upland soil stockpiles shall be contained by hay bales or silt fencing to prevent erosion. Maintain containment measures during the Work.

E. Excavating

1. Perform excavating of every type of material encountered within the limits of the Work to the lines, grades, and elevations indicated and specified herein.

2. Satisfactory Excavated Materials

3. Transport to, and place in, fill or embankment areas within the limits of the Work.

4. Unsatisfactory Excavated Materials

   a. Excavate to a distance below grade as directed by the Engineer, and replace with satisfactory materials.

   b. Include excavation of unsatisfactory materials, and replacement by satisfactory materials, as part of the work of this Section.

5. Surplus Materials

   a. It is a requirement of this Contract that excavated soils not determined to be grossly-contaminated by the Engineer or New York State Department of Environmental Conservation be stockpiled by the Contractor at a location on site per the direction of the Engineer and reused for backfilling the Areas of Concern identified on the Contract Drawings. Stockpiles are to conform to the requirements of Paragraph 3.01-D above. Soils determined to be grossly-contaminated based upon field screening processes shall be disposed of off-site in accordance with Section 02221 "Site Management Plan".

6. Excavating of Surfaces and Subsurfaces

   a. Where rocks, boulders, granite, or similar material is encountered, and where such material cannot be removed or excavated by conventional earth moving or ripping equipment, take required steps to proceed with the general grading operations of the Work, and remove or excavate such material by means which will neither cause additional cost to the Owner nor endanger buildings or structures whether on or off the site.

   b. Where existing subsurface structures are encountered, notwithstanding items described in Paragraph 3.01-D, where these subsurface structures are classified as abandoned by the Engineer, and where these structures impede progress of the Work, shall be removed by means which will neither cause additional cost to the Owner nor endanger buildings or structures on or off site.

   c. Do not use explosives without written permission from the Engineer.

7. Excavate and backfill in a manner and sequence that will provide proper drainage at all times.

8. Borrow

   a. Obtain material required for fill or embankment in excess of that produced within the grading limits of the Work from borrows areas selected and paid for by the Contractor and accepted by the Engineer.

9. Ditches and Gutters

   a. Cut accurately to the cross sections, grades, and elevations shown.

   b. Maintain excavations free from detrimental quantities of leaves, sticks, trash, and other debris until completion of the Work.

10. Unauthorized Excavations

   a. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimension without specific instruction from the Engineer.

   b. Under footings, foundations, or retaining walls:

      1) Fill unauthorized excavations by extending the indicated bottom elevation of the footing or base to the excavation bottom, without altering the required top elevation.

2) When acceptable to the Engineer, lean concrete fill may be used to bring the bottom elevation to proper position.

3) Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations, unless otherwise directed by the Engineer.

11. Stability of Excavations

a. Slope excavations as necessary to make slopes safe in accordance with the appropriate regulations.

b. Shore and brace where sloping is not possible because of space restrictions or stability of the materials being excavated.

c. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

12. Shoring and Bracing

a. Provide materials for shoring and bracing as may be necessary for safety of personnel, protection of work and compliance with requirements of governmental agencies having jurisdiction.

b. Maintain shoring and bracing in excavations regardless of the time period excavations will be open.

c. Construct shoring and bracing as excavation progresses.

13. Excavating the Structure

a. Conform to elevations and dimensions shown within a tolerance of 0.10 ft, and extending a sufficient distance from footings and foundations to permit placing and removing concrete formwork, installation of services, other construction required, and for inspection.

b. In excavating for footings, take care not to disturb bottom of excavation:

1) Excavate by hand tools to final grade just before concrete is placed.

2) Trim bottoms to required lines and grades to leave solid base to receive concrete.

3) Excavate for footings and foundations only after general site excavating, filling, and grading are complete.

14. Excavating the Pavement

a. Cut surface under pavements to comply with cross sections, elevations, and grades.

15. Cold Weather Protection

a. Protect excavation bottoms against freezing when ambient atmospheric temperature remains lower than 35 degrees F for more than four consecutive hours or is anticipated to be lower than 35 degrees F during non-working hours such as overnight, weekends, or holidays.

16. Filling and Backfilling

a. General:

1) For each area shown on the Drawings, place acceptable soil material in layers to required elevations.

2) Perform all backfilling and compaction operations in a careful and controlled manner. Avoid damaging existing structures. Prevent loss of material through openings in the bulkhead and prevent materials from entering the waterway.

17. Backfill excavations as promptly as progress of the Work permits, but not until completion of the following:

a. Acceptance of construction below finish grade including, where applicable, damp-proofing and waterproofing.

b. Inspecting, testing, approving, and recording locations of underground utilities.

c. Removing concrete formwork.

d. Removing shoring and bracing, and backfilling of voids with satisfactory materials.

e. Removing trash and debris.

f. Placement of horizontal bracing on horizontally supported walls.

18. Ground Surface Preparation

a. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious matter from ground surface prior to placement of fills.

b. Plow, strip, or break up sloped surfaces steeper than one vertical to four horizontal so that fill material will bond with existing surface.

c. When existing ground surface has a density less than specified under "compacting" for the particular area, break up the ground surface, pulverize, moisture condition to the optimum moisture content, and compact to required depth and percentage of maximum density.

19. Placing and Compacting

a. De-water area scheduled to receive backfill.

b. Place backfill and fill materials in layers not more than 8" in loose depth.

c. Before compacting, moisten or aerate each layer as necessary to provide the optimum moisture content.

d. Compact each layer to required percentage of maximum density for area.

e. Do not place backfill or fill material on surfaces that are muddy, frozen, or containing frost or ice.

f. Place backfill and fill materials evenly along structures, to required elevations.

g. Take care to prevent wedging action of backfill against structures by carrying the material uniformly around the structure to approximately the same elevation in each lift.

20. Grading

a. General:

1) Uniformly grade the areas within limits of grading under this Section, including adjacent transition areas.

2) Smooth the finished surfaces within specified tolerance.

3) Compact with uniform levels or slopes between points where elevations are shown on the Drawings, or between such points and existing grades.

4) Where a change of slope is indicated on the Drawings, construct a rolled transition section having a minimum radius of approximately 8'-0" unless adjacent construction will not permit such a transition, or if such a transition defeats positive control of drainage.

b. Grading outside building lines:

1) Grade areas adjacent to buildings to achieve drainage away from the structures, and to prevent ponding.

2) Finish the surfaces to be free from irregular surface changes, and:

a) Shape the surface of areas scheduled to be under walks to line, grade, and cross-section, with finished surface not more than 0.10 ft above or below the required subgrade elevation.

b) Shape the surface of areas scheduled to be under pavement to line, grade, and cross section, with finished surface not more than 0.05 ft above or below the required subgrade elevation.

21. Compacting

a. Control backfill compaction during construction to provide the minimum percentage of density specified for each area as determined according to ASTM D1557.

b. Backfill material's density shall not be below 99% of its density at optimum moisture content as determined by the above test in all layers.

c. Moisture control:

1) Where subgrade or layer of soil material must be moisture-conditioned before compacting, uniformly apply water to surface of subgrade or layer of soil material to prevent free water appearing on surface during or subsequent to compacting operations.

2) Remove and replace, or scarify and air dry, soil material that is too wet to permit compacting to the specified density.

3) Soil material that has been removed because it is too wet to permit compacting may be stockpiled or spread and allowed to dry. Assist drying by dicing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value as determined by moisture density relation tests reviewed by the Engineer.

22. Pipe Bedding Material

a. Support pipe as required during placement and compaction of bedding fill. Place and compact as described in paragraphs above taking care not to damage piping. Extent of material shall be as indicated on the Drawings.

23. Processed Gravel Surface

a. Work shall be in strict accordance with Section 411, "Stabilized Gravel Surface Course" of the NYSDOT Standard Specifications.

3.2 MAINTENANCE

A. Protection of newly graded areas:

1. Protect newly graded areas from traffic and erosion, and keep free from trash and weeds.

2. Repair and re-establish grades in settled, eroded, and rutted areas to the specified tolerances.

B. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape, and compact to the required density prior to further construction.

END SECTION 02220

SECTION 02221 SITE MANAGEMENT PLAN

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawing and general provisions of contract, including General and Supplementary Conditions and Division 1 specification sections, apply to this section.

1.2 SUMMARY

A. This Section includes requirements for excavation, disposal and testing of existing contaminated soil, groundwater and other sites materials that will be encountered while performing the work at the project site. The plan also provides requirements for health and safety, air monitoring, site controls, and other procedures to be followed while handling contaminated material on the project site.

1.3 DEFINITION

A. Refer to and follow all provisions of the "Site Management Plan" dated July 17, 2007 which is included with this specification.

1.4 SUBMITTAL

A. Health and Safety Plan

B. Quality Assurance/Quality Control Plan

C. Air Monitoring Plan

D. Waste Characterization Sample Analytical Results

E. Confirmatory Soil Sample Analytical Results

F. Waste Disposal Documentation

G. Certifications of Uncontaminated Materials from Borrow Sources

1.5 QUALITY ASSURANCE

A. Testing and monitoring requirements are included in the Site Management Plan.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RELATED DOCUMENTS

A. The Site Management Plan is attached and made part of this specification.

END SECTION 02221
SITE MANAGEMENT PLAN



Site Management Plan

The DeLaval Property
Rinaldi Boulevard
City of Poughkeepsie, New York
ERP Site No. B00190-3

CHA Project Number: 14357.1001.1102

Prepared for:

City of Poughkeepsie
62 Civic Center Plaza
P.O. Box 300
Poughkeepsie, New York 12602-0300

Prepared by:

CLOUGH HARBOUR & ASSOCIATES LLP
III Winners Circle
Albany, New York 12205
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(518) 453-4773 - Fax

July 17, 2007

I:\14357\Rpt\Site Management Plan\14357_SMP_July_07.doc

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APPENDICES

Appendix A Range of Contaminants & Concentrations at the DeLaval Property

LIST OF ACRONYMS & ABBREVIATIONS

AOC	Area of Concern
ASP	Analytical Services Protocol
CAMP	Community Air Monitoring Plan
CHA	Clough Harbour & Associates LLP
CVOC	Chlorinated Volatile Organic Compound
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
FPS	Feet Per Second
GAC	Granular Activated Carbon
HASP	Health & Safety Plan
HDPE	High Density Polyethylene
NOI	Notice of Intent
NTU	Nephelometric Turbidity Unit
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyls
PID	Photoionization Detector
POTW	Publicly Owned Treatment Works
PPE	Personal Protective Equipment
PPM	Parts Per Million
PRAP	Proposed Remedial Action Plan
QA/QC	Quality Assurance/Quality Control
RAR	Remedial Alternatives Report
RCRA	Resource Conservation and Recovery Act
RDWP	Remedial Design Work Plan
ROD	Record of Decision
SCG	Standard, Criteria, and Guidance
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SVOC	Semi- Volatile Organic Compound
SWPPP	Stormwater Pollution Prevention Plan
TAGM	Technical & Administrative Guidance Memorandum
TAL	Target Analyte List
TCC	The Chazen Companies
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TMP	Tax Map Parcel
TOGS	Technical & Operational Guidance Series
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

1.0 INTRODUCTION

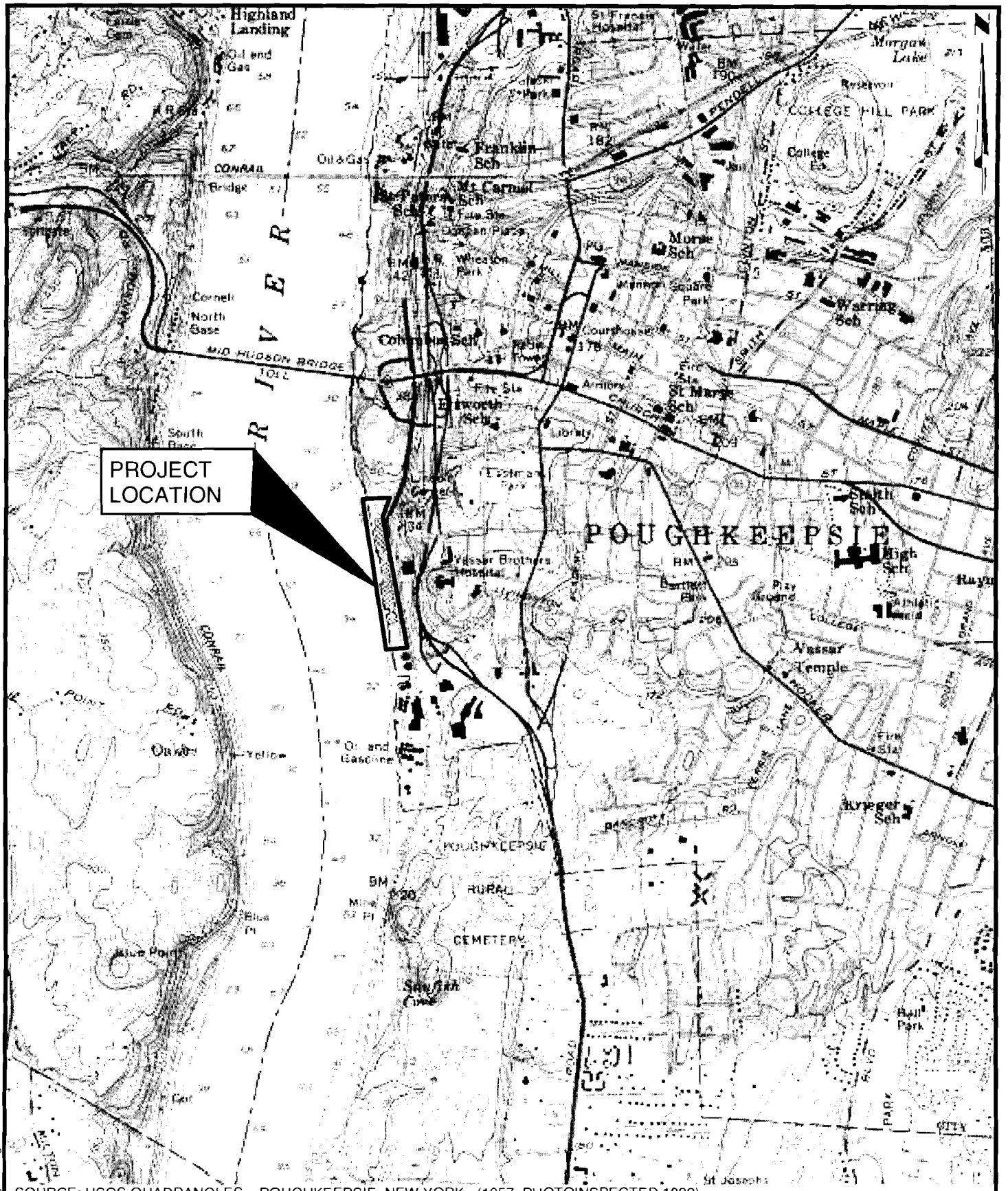
The City of Poughkeepsie has retained Clough Harbour & Associates LLP (CHA) to prepare this Site Management Plan (SMP) for the DeLaval property, a former industrial site located off of the intersection of Rinaldi Boulevard and Pine Street and along the Hudson River in the City of Poughkeepsie, Dutchess County, New York. A site location map has been included as Figure 1. This SMP will provide a basis for defining the procedures and requirements to be followed during the implementation of the remedial tasks at the DeLaval property. Figure 2 has been included to show the existing site conditions and the areas of concern identified on the DeLaval property through previous investigations.

1.1 SITE DESCRIPTION

The DeLaval property consists of a single parcel of land located to the southwest of the intersection of Rinaldi Boulevard and Pine Street, and is approximately 13.4-acres in size with approximately 2,200 feet of direct waterfront along the Hudson River. The site is identified as Tax Map Parcel (TMP) No. 31-6061-43-752749 by the City of Poughkeepsie and is currently vacant. The site is largely covered by grass, scrub brush, small trees, other vegetation and soil/debris stockpiles. The site is accessed through a gate at the north end of the property, located off the southwest corner of the intersection between Rinaldi Boulevard and Pine Street.

1.2 SITE HISTORY

The DeLaval property has been in use since at least 1887 and was used for a variety of industrial and manufacturing uses up until the late 1960s or early 1970s, at which time the parcel became vacant. The specific waste disposal practices related to the past industrial operations on the site are not definitively known. However, site investigations have revealed that that an area on the southern portion of the property was once used as a landfill and minor convenience dumping was observed at various locations on the site. In addition, significant petroleum contamination was identified near the central portion of the DeLaval property.



SOURCE: USGS QUADRANGLES – POUGHKEEPSIE, NEW YORK. (1957, PHOTOINSPECTED 1982).

CLOUGH HARBOUR & ASSOCIATES LLP

SCALE: 1"=2000'±

DATE: JULY 2007

FIGURE 1

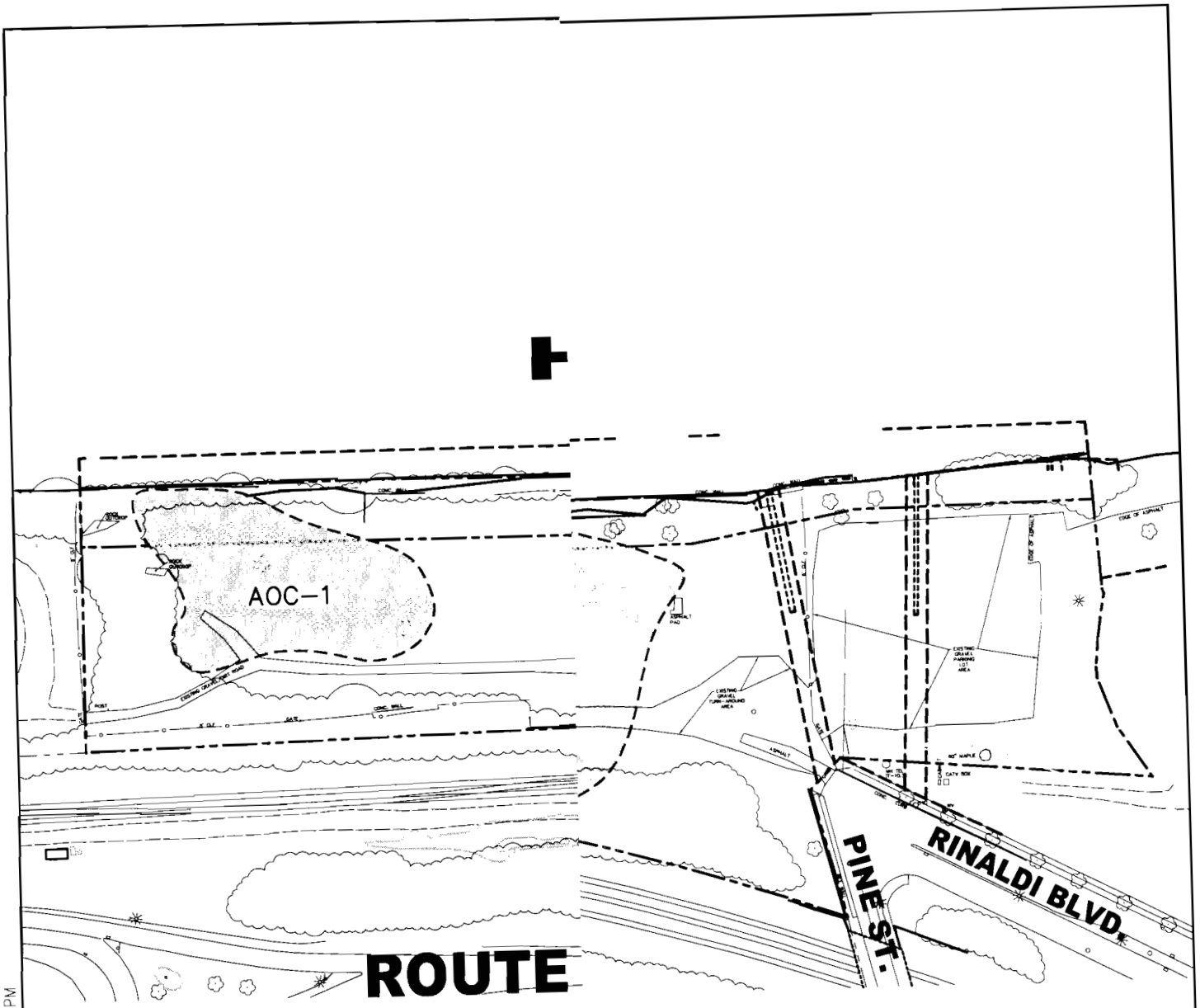
SITE LOCATION MAP

DELAVAL PROPERTY

CITY OF POUGHKEEPSIE

COUNTY OF DUTCHESS, STATE OF NEW YORK

I:\14357\Rpt\RD Work Plan\Figures\Figure 1 - Site Location.doc



LEGEND

AOC-1 A

NOTE:

BASEMAP PROVIDED FROM THE CHAZEN COMPA
(TCC) PHASE SUBSURFACE INVESTIGATION REP(
DATED MAY 2001.

FIGURE 2

AREAS OF CONCERN

DELAVAL PROPERTY
CITY OF POUGHKEEPSIE
DUTCHESS COUNTY, STATE OF NEW YORK

File: M:\11205\Rpt\RAR-Final\Figure 5 - Layout.dwg User: 330 1/24/2005 03:57 PM

The DeLaval property has been investigated by CHA and The Chazen Companies (TCC) through contracts with the City. The initial TCC assessments of the DeLaval property were conducted prior to the City entering the New York State Department of Environmental Conservation's (NYSDEC's) Environmental Restoration Program (ERP).

Since the DeLaval project entered into the ERP, CHA has conducted a supplemental investigation at the site to further understand the environmental condition of the DeLaval property. CHA also prepared a Remedial Alternatives Report (RAR) to evaluate potential remedies for the site. After the supplemental investigation report and the RAR were completed in January 2005, the NYSDEC issued the Proposed Remedial Action Plan (PRAP) for the site in February 2005 and a Record of Decision (ROD) describing the proposed site remedy was issued in March of 2005.

1.3 PURPOSE OF THE SMP

The proposed site remedy for the DeLaval property will include a number of intrusive activities, such as the clearing and grubbing of the site to facilitate the installation of a soil cap and the excavation of several thousand cubic yards of petroleum-impacted soils from the site for off-site disposal. Another major component of the proposed remedy for the site is the installation of two bulkheads down-gradient of areas of environmental concern to limit the migration of residual petroleum contamination into the Hudson River.

The objective of this SMP is to set guidelines for the management of soil, groundwater, and air quality during the intrusive remedial construction. Following the guidelines in the SMP will provide protection of human health and the environment during and subsequent to the completion of the remedial and redevelopment construction at the DeLaval property.

This SMP is applicable to all remedial activities performed on the DeLaval property only. The SMP is considered part of the Contract Documents associated with the DeLaval Property Environmental Restoration Program (ERP) project.

1.4 ORGANIZATION OF REPORT

The work plan is divided into four major sections. Section 1 identifies the DeLaval project and describes the purpose and organization of the report and Section 2 provides a description of the nature and extent of contamination on the site. Section 3 of the report details the procedures to be followed during the remedial construction. Section 4 summarizes the minimal health and safety requirements for completing the remedial work at the DeLaval property.

2.0 NATURE & EXTENT OF CONTAMINATION

The following subsections are intended to summarize the nature and extent of the contamination identified through previous investigations at the DeLaval property. However, the complete details of the previous investigations are available for review in CHA's *Supplementary Investigation Summary Report*, dated January 2005 and TCC's *Phase II Subsurface Investigation Report for the DeLaval Property*, dated May 2001. Copies of these reports are maintained at CHA's Albany, New York office as wells as the City of Poughkeepsie municipal offices.

2.1 AREAS OF CONCERN

Based upon the subsurface investigations previously completed at the site by CHA and TCC, the following three areas of environmental concern (AOCs) associated with the DeLaval property have been identified and are illustrated on Figure 2.

- **AOC-1:** An industrial landfill/construction & demolition debris disposal area located along the southern end of the property.
- **AOC-2/3:** An area of petroleum-impacted soil and groundwater in the central portion of the site that parallels the Hudson River.
- **AOC-4:** An area adjacent to a former Paint Shop along the eastern border of the site.

A relieving platform concrete retaining wall and concrete bulkhead exists along the entire DeLaval property shoreline. The structure includes a buried concrete bulkhead or cutoff wall that has apparently impeded the migration of significant quantities of petroleum contaminants observed in the AOCs towards the Hudson River. However, the condition of the existing wall varies from adequately intact to significantly eroded and dilapidated.

It should be noted that grossly contaminated soils, referred to throughout the work plan, are defined as soil, fill or debris, sediment, surface water, or groundwater which contain free product or mobile contamination that is identifiable either visually, through strong odors, by elevated vapor levels as indicated by field instrumentation, or is otherwise readily detectable without laboratory analysis.

2.1.1 AOC-1: Construction & Demolition Debris Disposal Area

AOC-1 is an area that is suspected of being used as an industrial landfill for the disposal of construction and demolition debris. This area is located near the south end of the DeLaval property and is estimated to be approximately 0.8-acres (35,000 square feet) in size. The depth to the contamination in this area typically ranged from five to fifteen feet below the ground surface. A variety of materials were encountered in AOC-1 including silt, sands, cobbles, metal lathe millings, brick, fire brick, concrete, clay pipe, scrap metal, glass, ceramic tile, wood, asphalt roofing material, slag, plastic, scrap metal, flawed machinery and automobile parts, metal shavings covered with a white grease-like lubricant, and tires. In addition, CHA noted a petroleum odor and sheen on the groundwater observed in some of the test pits excavated along the west side of AOC-1 during the supplemental investigation.

2.1.2 AOC-2/AOC-3: Northwest Petroleum-Impacted Area

AOC-2 and AOC-3 were initially thought to be separate petroleum impacted areas located near the center of the DeLaval property. However, based up on the results of the supplemental investigation, it appears that these areas are connected and contain similar contaminants. AOC-2/3 has an approximate area of 2.4-acres (105,000 square feet) and the petroleum impacted soils were typically encountered at a depth between two to five feet below the ground surface. The vertical extent of the contamination was not verified at several locations in AOC-2/3 due to the presence of concrete or brick structures encountered, and the instability of the trench below the water table, especially where coarse slag material or cobbles were encountered. However, petroleum odors were noted at depths of fourteen feet below the ground surface.

An abandoned six-inch diameter pipeline and an approximately 4,000-gallon fuel oil underground storage tank (UST) were identified in addition to the petroleum impacted soils in this area during the completion of the supplemental investigation. It appeared that historical releases from the pipeline and UST may have contributed to the observed petroleum contamination in AOC-2/3. The fuel oil pipeline is located approximately four feet below grade and was apparently installed over a concrete

slab. While the slab is believed to have reduced the vertical migration of the petroleum contamination, the pad was noted to be in poor condition or absent in some locations.

The water table was typically encountered at a depth of four to eight feet below the ground surface depending upon the ground surface elevation and the tide in the Hudson River at the time that the test pits were installed. In several of the test pits excavated in AOC-2/AOC-3, the groundwater was black in color with a moderate to strong petroleum odor. It is unclear whether the black color observed in association with the groundwater was attributable to the petroleum contamination, the presence of slag and other fill materials in the subsurface or septic conditions associated with potential anaerobic breakdown of the contaminants. However, a petroleum odor did typically coincide with the presence of the sheen.

2.1.3 AOC-4: Former Paint Shop Area

AOC-4 is located adjacent to the location of a former paint shop along the east side of the DeLaval property. The impacted area is estimated to be approximately 0.45-acres (20,000 square feet) in size and the impacted soils were typically encountered at an interval of two to eight feet below the ground surface. Although TCC noted a strong solvent-like odor while excavating the test pits in AOC-4 during the Phase II investigation, the analytical results for the soil samples collected in this area did not indicate the presence of elevated concentrations of volatile organic compounds (VOCs) or chlorinated-VOCs (CVOCs). However, several SVOCs were detected in the soil samples collected from AOC-4 at concentrations above NYSDEC Soil Cleanup Objectives.

2.2 NATURE & EXTENT OF CONTAMINATION

Many soil and groundwater samples were collected to characterize the nature and extent of contamination at the site during the site investigations. The main categories of contaminants that exceed the NYSDEC Standards, Criteria, and Guidance (SCG) values are VOCs, semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and metals.

Numerous SVOCs were detected in the soil samples collected at the site. The SVOCs consisted primarily of a group of compounds known as polynuclear aromatic hydrocarbons (PAHs). PAHs are compounds that are part of the makeup of petroleum or asphalt products, roofing products, soot from open burning, exhaust emissions from internal combustion engines, among other sources. As could be expected at a former industrial property such as this, PAH compounds were found to be widespread across the site in both surface and subsurface soils. The PAH compounds most commonly detected above SCGs include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene.

Inorganics, or metals, were also detected in soil at the site at concentrations above SCGs. Specifically, the metals most commonly detected at the DeLaval property included arsenic, cadmium, chromium, lead, silver, and mercury.

PCBs were detected above SCGs in the southern area of the site in surface and subsurface soils and in groundwater.

The extent of contamination and the media affected are detailed in the following subsections.

2.2.1 Waste Materials

As previously indicated, a number of water materials were encountered in AOC-1. While fill materials, including soil, cobbles, and slag were encountered across majority of the DeLaval property, the subsurface investigations revealed that concrete, brick, scrap metal, and wood were also present in AOC-2/3.

2.2.2 Surface Soils

The analytical results for the surface soil samples were compared to the NYSDEC's Recommended Soil Cleanup Objective concentrations listed in Technical and Guidance Memorandum (TAGM) No. 4046, which the NYSDEC has established as the surface soil SCG values for surface soils at the DeLaval property.

A number of SVOCs, namely PAHs, were detected in the surface soil samples collected across the DeLaval property. Phenanthrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene, were detected in excess of the NYSDEC recommended soil cleanup objective concentrations . It appears that the contamination is fairly widespread across much of the DeLaval property, rather than being limited to a few isolated areas. With the exception of five of the soil samples collected across the site, at least one SVOC was detected in excess of the cleanup objective concentration.

Aroclor-1260 was the only PCB congener detected in the surface soils on the DeLaval property. It was detected in 11 of the 30 surface soil samples collected from the DeLaval property, mainly along north side of AOC-1 and the northern one-third of the property. However, Aroclor-1260 was only detected in three samples exceeding the TAGM 4046 guidance value of 1 part per million (ppm) along the north end of AOC-1, with concentrations up to 3.4 ppm.

Metals contamination was also identified in a majority of the surface soils collected from the DeLaval property. With the exception of the background sample and a sample collected approximately three-hundred feet south of the background sample, there were at least three metals in excess of the background concentrations in all of the surface soil samples on the DeLaval property. Arsenic, cadmium, chromium, lead, silver, and mercury were the most commonly occurring metals detected above the SCGs. Maximum concentrations detected during the supplemental investigation include arsenic at concentrations up to 24.8 ppm, cadmium at concentrations up to 8.7 ppm, chromium at concentrations up to 627 ppm, lead at concentrations up to 908 ppm, silver at concentrations up to 240 ppm, and mercury at concentrations up to 1.3 ppm.

2.2.3 Subsurface Soils

Contamination in the subsurface soils is mainly located within the three previously identified AOCs. Petroleum- related VOCs, PAHs, and metals contamination are widespread in AOC-1 and AOC-2/3. AOC-4 contained low-level PAH contamination and was observed to have solvent odors in test pits.

TAGM 4046 guidance values were exceeded in AOC-1 for VOCs, SVOCs, PCBs, and heavy metals. VOC compounds included benzene detected at one location at 2.3 ppm, xylenes at two locations up to 2.5 ppm, and 1,1,1-trichloroethane at one location at 2.3 ppm. SVOCs were more prevalent, consisting of PAHs at concentrations several times the TAGM 4046 guidance values. PCBs were detected in one subsurface sample at 11 ppm, slightly above the TAGM 4046 guidance value of 10 ppm. Heavy metals were detected above TAGM 4046 guidance values at eight locations and included arsenic, mercury, barium, cadmium, chromium, lead, and silver. Evidence of petroleum contamination was encountered along the western edge of AOC-1 as well as strong petroleum odors and heavy black staining of the soils.

SVOCs and heavy metals were detected in AOC-2/3 above TAGM 4046 guidance values. PAHs were found at most test pit locations at concentrations several times the guidance values. Heavy metals were detected at similar frequency and concentrations as found in AOC-1.

A test pit was excavated along the south side of the suspected location of a six-inch steel pipe used for the transmission of fuel oil in AOC-2. The pipe was located and found to be in relatively poor condition and the soils surrounding the pipe appeared saturated with fuel oil (reportedly No. 6 fuel oil). The fuel oil pipeline was located approximately four feet below grade and was apparently installed over a concrete slab. While the slab is believed to have reduced the vertical migration of the petroleum contamination, the pad was noted to be in poor condition or absent in some locations. It was determined that the top two feet of fill material was relatively free of petroleum contamination, while the approximately two feet of contaminated soil is present immediately above the pipe. Said soils were stained and had a strong petroleum odor. In locations where the concrete slab was broken up or missing, the petroleum contamination was identified to be deeper than four feet.

The horizontal extent of contamination was estimated to be between 15 to 25 feet north and south of the pipe line. While it appeared that most of the petroleum had migrated along the top of the concrete slab, some additional contamination was also found near the edges of the concrete pad. The contamination apparently extends along the majority of the length of the pipeline, which extends from the bulkhead along the Hudson River eastward to a point approximately 20 feet east of the

gravel access road that traverses the property from north to south. Most of the subsurface soil identified as requiring remediation in AOC-1 and AOC-2/3 was based on observations that met the criteria for grossly contaminated soils.

While investigating the length of the pipe line, an approximately 4,000-gallon underground storage tank (UST) containing fuel oil, sludge, and/or groundwater was encountered along the south side of the pipeline. A majority of the tank was not unearthed at the time of the investigation, and, therefore, the overall condition of the tank is unknown.

Several fill materials were also encountered in the test pits installed in AOC-4, including concrete, brick, slag, wood, and several cobbles. While no significant staining was observed on the soils in AOC-4, PID readings ranging from 23 to 31 ppm and a solvent-like odor emanating from the test pits were noted. Other than a slight sheen on the groundwater table observed in test pit TP-41, there was no field evidence of groundwater contamination in the test pits excavated in AOC-4.

2.2.4 Groundwater

Several groundwater samples were collected from on-site monitoring wells during the subsurface investigations conducted at the DeLaval property. The groundwater results were evaluated by comparing the data to the NYSDEC's *Technical and Operational Guidance Series (TOGS) 1.1.1 of "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" for fresh (Class GA) Groundwater (1998).* The following paragraphs summarize the results of the groundwater investigations; however, the analytical results from these investigations indicate that the impact to the groundwater quality beneath the DeLaval property has been minimal.

Black groundwater with a moderate to strong petroleum odor and with sheen on the surface was encountered in a number of the test pits in AOC-2/3. The sheen ranged from discoloration on the groundwater surface to the formation of small oil droplets on the water surface. It is unclear whether the black color observed in the groundwater was attributable to the petroleum contamination, the presence of slag and other fill materials in the subsurface, or septic conditions associated with

potential anaerobic breakdown of the contaminants. However, at a minimum, a petroleum odor typically coincided with the presence of the sheen.

Based on analytical data from the investigations at the site, chemical impacts to groundwater are minimal. 1,2,4-trimethylbenzene was detected above SCGs in one sample, as was naphthalene, p-& m-xylene, and cis-1,2-dichloroethene. PCBs were detected above SCGs on two occasions from one well located in AOC-1 at a concentration of 4.7 ppb during the first sampling event and 0.31 ppb during a second sampling event. Lead was detected above the SCGs in one sample collected from monitoring wells.

2.2.5 Soil Gas

Based upon some of the putrescible wastes identified TCC in AOC-1, a soil gas survey was performed in this area to measure concentrations of combustible gas. Soil gas results from the survey conducted in AOC-1 indicate there is no active methane gas generation in the vicinity of the landfill.

3.0 MANAGEMENT OF SOIL & WATER

The purpose of this section is to establish appropriate protocol for site management for remedial activities that will require the disturbance of soils and groundwater at the DeLaval property. The NYSDEC will be notified a minimum of five working days, prior to a contractor(s) conducting any intrusive activities at the DeLaval property.

3.1 PROJECT PHASING

The overall phasing of the DeLaval project is integral to the success of the project and will require detailed coordination between the remedial construction and the subsequent redevelopment construction activities. While the exact phasing of the project will be determined after the project is awarded and a schedule is negotiated between the City and the selected remedial contractor, the phasing is currently expected to proceed as follows:

1. Site controls as well as erosion and sediment controls will be installed on the DeLaval Property.

2. Limited clearing will be performed to facilitate the installation of the bulkheads down-gradient of the AOCs.

3. The bulkheads down gradient of the AOCs will be installed, with the bulkhead down gradient of AOC-1 being installed first.

4. Limited clearing will be performed in the AOCs to facilitate the excavation activities that are proposed in each area to remove grossly-contaminated soils. It is possible that the excavation activities to remove grossly-contaminated soil will begin in AOC-1 immediately following the installation of the bulkhead in that area. Alternatively, both bulkheads may be completed prior to beginning the AOC excavations. The underground storage tank and six-inch diameter pipe containing weathered fuel oil will be excavated for off-site disposal during the excavation activities within AOC-2/3.

5. The AOCs will be backfilled to an elevation of at least one foot above the mean high water level and the remaining open excavation will be fenced off to protect on-site personnel.

6. Remaining structures on the DeLaval site will be demolished or salvaged and removed from the project site.

7. The remainder of the site will be cleared and grubbed.

8. The Developer of the site will be allowed a forty-five (45) day period to complete stripping of topsoil from the project site, complete rough grading activities, install subsurface utilities, and utilize acceptable excavated material for backfill in the AOCs. The purpose of this effort is to reduce the amount of soil requiring off-site disposal, as well as the amount of clean fill that needs to be imported to backfill the AOCs.

9. Following the Developer's work, the remedial Contractor will install a geotextile demarcation layer across the entire project site and a one-foot soil cover system.

10. If the Developer is prepared to take over the project site immediately following the placement of the soil cover layer, the cover will consist of select fill only. However, an alternate as been included in the Contract Documents in case the Developer is not prepared to immediately take over the site. In this case, only six (6) inches of select fill will be placed above the demarcation layer and the top six (6) inches will be topsoil. The remedial Contractor would also be responsible for establishing vegetation on the site and removing site controls under this alternative.

11. The Developer will complete the remaining redevelopment construction under a similar Soil Management Plan, including the construction of buildings, parking lots, and other proposed site features. The Developer will also be responsible for installing sub-slab depressurization system (including pipe networking and stone beneath floor slaps, blower systems, exhaust pipes, etc.) beneath each building.

As indicated above, the remedial construction and site development-related activities will be phased. While providing an opportunity for the Developer to enter the site and complete some activities during the remedial process is not desirable, it does provide a logical progression for the work given the proposed redevelopment of the site. It is also anticipated that this phasing will provide a significant reduction in the overall project costs by reducing the amount of material that has to be disposed of off-site as well as the amount of material that has to be imported to backfill the AOCs.

3.2 PRE-EXCAVATION SAMPLING

Given the amount of soil that will be excavated for off-site disposal and the limited space to stage large volumes of soils on the DeLaval property, it will be preferable to direct load the majority of the material to be disposed off-site directly into trucks for hauling. Direct loading of the materials requiring off-site disposal will also reduce the amount of material being handled more than once.

While the need to temporarily stage soil on-site during the remedial process cannot be eliminated, the goal of the pre-excavation sampling is to minimize this action.

Although several soil samples have been previously collected from the site and analyzed, additional soils will be collected and analyzed prior to commencing any significant excavation activities to further characterize the materials for disposal purposes. The proposed sampling frequencies for each area of concern are summarized in Table 1. However, it is understood that the actual sampling frequency and analyses required will be specified by the disposal facility. The Contractor will provide a copy of the permit for the chosen disposal facility and provide copies of all bill of ladings/waste manifests to the Engineer.

Table 1. Pre-Excavation Sampling Frequency

Area of Concern	Sampling Frequency	Samples	Duplicate Samples	Minimum Total Samples
AOC-1	Per every 1,000 CY	1 composite 1 grab	1 composite 1 grab	2 composite 2 grab
AOC-2/3	Per every 2,000 CY	1 composite 1 grab	1 composite 1 grab	2 composite 2 grab

Note: The additional duplicate samples will be collected at the same time as the initial samples. However, the duplicate samples will only be analyzed if the initial results are anomalous and indicate a significant change in the type and concentration of contaminants present.

The specified frequency of sampling for AOC-1 is higher than for AOC-2/3 due to the variation in materials identified in this area during previous subsurface investigations. While grossly-contaminated soils and fill are also known to exist in AOC-2/3 as well, the materials identified in this area were considerably more homogeneous relative to the soil/fill type as wells as the type of contaminants present. As a result, a reduced waste characterization sampling frequency is warranted.

The grab samples shall be collected by personnel wearing a freshly donned pair of latex gloves (or equivalent) and appropriately decontaminated, stainless steel hand tools. The samples should be immediately placed into the appropriately pre-preserved laboratory containers and labeled. The labeled containers should then be placed on ice and cooled to 4° Fahrenheit.

The composite samples shall be collected from various depths in each AOC, but should be within the depths at which contamination was previously encountered in, as described in Section 2.1 of this document. Each composite will be formed from five equally sized, discrete sub-sample soil samples. The samples can be collected by hand with a fresh pair of gloves or with appropriately decontaminated stainless steel hand tools.

The sub-samples will then immediately be placed into a stainless steel bowl and covered with aluminum foil. While composite sampling will not be utilized for samples collected for VOC analysis, the bowl will be covered between the additions of each sub-sample to minimize the potential for volatilization of any semivolatile contaminates that may have been present in the soil.

Once all five of the sub-samples are added to the bowl, the soil samples will be thoroughly homogenized using a stainless steel spoon/scoop and immediately transferred to the appropriate laboratory containers and managed in a similar manner as the grab samples. The locations of each soil sample should be identified on a map or sketch and submitted to the Engineer and the City of Poughkeepsie along with the analytical results.

The soil samples will be submitted to a laboratory certified under the New York State Department of Health's Environmental Laboratory Approval Program (ELAP) for analysis following appropriate chain-of-custody protocols. The specific analytical waste characterization requirements of the waste disposal facility may vary and shall be verified prior to sampling. The parameters required for waste disposal characterization will likely include following:

- Target compound list (TCL) VOCs by NYSDEC Analytical Services Protocol (ASP) 95-1.
- TCL SVOCs by NYSDEC ASP 95-2
- TCL PCBs by NYSDEC ASP 95-3.
- Target Analyte List (TAL) metals and cyanide by NYSDEC ASP.
- Toxicity Leaching Characteristic Procedure (TCLP) Extraction
- Hazardous Waste Characteristics as defined under the Resource Conservation and Recovery Act (RCRA), including ignitability, corrosivity, and reactivity.
- pH via EPA Method 9045
- Percent Solids via Method 160.3
- Paint Filter Test via Method 9095
- Additional analyses as required by the disposal facility.

Excavation activities in areas outside the AOCs are excluded from the pre-excavation sampling requirements. However, if visual, olfactory, or photoionic evidence of gross contamination is identified in areas outside the AOCs, excavation activities will continue with the approval of the engineer and the NYSDEC. It is anticipated that any additional excavation required and approved by the NYSDEC will be eligible for reimbursement under the ERP.

No hazardous waste is anticipated to be encountered on the DeLaval site. However, should hazardous waste be encountered, appropriate additional precautions will be required at that time by the NYSDEC. The City has submitted a RCRA Subtitle C Site Identification Form to provide Initial Notification of Regulated Waste Activity to the United States Environmental Protection Agency (USEPA) to obtain an EPA ID Number. This number will be provided to the remedial Contractor should the Contractor need to dispose of hazardous waste off-site.

3.3 SITE CONTROLS

The site controls implemented at the DeLaval property will minimize the potential for detrimental impacts to the environment and human health associated with the proposed excavations and handling of petroleum impacted soils. All appropriate site controls must be in place prior to conducting any intrusive activities at the site.

3.3.1 Erosion & Sediment Controls

Prior to beginning any excavation activities, appropriate erosion and sediment controls will be installed. The erosion and sediments controls established in Stormwater Pollution Prevention Plan (SWPPP) describe temporary and a limited number of permanent erosion and sediment controls that will be employed prior to and during the remedial construction. However, the Developer completing the remedial construction and/or the consultant retained by the Developer will be responsible for designing the temporary erosion and sediment controls to be employed during the redevelopment construction on the DeLaval property as wells as permanent stormwater management systems. All erosion and sediment controls should be installed in accordance with the NYSDEC's Standards and Specifications for Erosion and Sediment Control, dated January 2004.

Current federal and state laws require that a NYSDEC State Pollution Discharge Elimination System (SPDES) General Permit for Storm Water Discharges from Construction Activities be obtained prior to completing intrusive activities at the site that will expose the site soils and make them susceptible to erosion. Requirements for coverage under the Construction Storm Water General Permit include the submittal of a Notice of Intent (NOI) form and the development of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must fulfill all permit requirements and will provide the following information:

- A background discussion of the scope of the construction/remedial project.
- A description of proposed soil erosion and sediment controls.
- A description of the type and frequency of maintenance activities required to support the control measure.
- Spill prevention measures
- Certifications

No significant redevelopment of the site will be conducted during remedial construction, except for some site preparation activities and the installation of subsurface utilities. Therefore, the SWPPP filed for the remedial phase of the project will only address issues such as erosion prevention, sedimentation control, hydraulic loading, pollutant loading, physical site characteristics that impact design, and site management planning. An evaluation of permanent storm water management objectives/stormwater control measures, post-development runoff conditions, etc. will not be completed for the remedial construction SWPPP. However, these topics will be evaluated in detail in the SWPPP filed for the redevelopment construction. If, however, the remedial and redevelopment work is completed concurrently, this approach may be altered. If this is the case, a single SWPPP may be prepared.

The SWPPP will also include a contingency plan to be implemented in the event that heavy rain events are determined to be impacting water quality in the Hudson River due to remedial and/or redevelopment activities being conducted at the DeLaval property. All descriptions of proposed features and structures at the site will include a description of structure placement, supporting engineering data, construction scheduling, and references to established detailed design criteria. The SWPPP will conform to all requirements as established by applicable regulatory agencies.

Proven soil conservation practices will be incorporated in the construction and development plans to mitigate soil erosion, off-site sediment migration, and water pollution from erosion. These practices combine vegetative and structural measures. Many of these measures will be permanent in nature and become part of the completed construction project (design features such as drainage channels and grading). Other measures will be temporary and serve only during the construction stage. The contractor will remove temporary measures at the completion of construction. The selection of erosion and sediment control measures will be based on several general principles, including:

- The minimization of erosion through project design (maximum slopes, phased construction, etc.).
- The incorporation of temporary and permanent erosion control measures.
- The removal of sediment from sediment-laden storm water before it leaves the DeLaval property.

The use of appropriate temporary erosion control measures such as silt fencing and/or hay bales will be required around all soil/fill stockpiles and unvegetated soil surfaces during redevelopment activities. These methods are described below. Stockpiles shall be graded and compacted as necessary to provide positive surface water runoff and dust control. Stockpiles of soil/fill will be placed a minimum of twenty feet from the DeLaval property boundaries and as far away from the Hudson River as practical.

3.3.1.1 Temporary Erosion Control Measures

Temporary erosion and sedimentation control measures and facilities will be employed during active construction stages. Prior to any intrusive construction activity, temporary erosion and sediment control measures shall be installed and maintained until such time that permanent erosion control measures are installed and effective. Additional sediment control measures may also be necessary. Structural measures, such as those described below, will be designed and installed to provide the required sediment and erosion control:

- Fiber reinforced plastic sheeting and turbidity curtains
- Silt fencing
- Straw bales
- Temporary vegetation/mulching

Given the concern with excavating the AOCs in close proximity to the Hudson River and the potential to allow contaminants to migrate from the DeLaval property towards the river, the installation of the bulkheads will be completed prior to any other remedial work on the property. The bulkheads will then serve as a barrier down-gradient of the AOCs during the remedial excavation activities, restricting the site runoff. In addition, turbidity curtains will be installed north, south, and in between the bulkheads to form a continuous barrier along the DeLaval waterfront in areas where intrusive work is being completed. While other erosion control systems will be installed along the DeLaval shoreline, the turbidity curtain will serve as a contingency erosion control device in the event that the primary sediment control measures fail. Small gaps in the barrier may be necessary to accommodate the stormwater sewers that cross the northern end of the Property and discharge into the Hudson River.

Re-grading and cover activities may result in sheet flow to various areas of the DeLaval property, and therefore, silt fencing will be used as the primary sediment control measure. Prior to extensive clearing, grading, excavation, and placement of cover soils, silt fences will be installed along all construction perimeter areas to prevent sedimentation in low areas and drainage areas. The location and orientation of silt fencing to be used during redevelopment operations will be field determined. There may be breaks and overlaps in the silt fencing to allow construction vehicles access to the construction areas.

Intermediate silt fencing will be used upslope of perimeter areas where phased construction activities are occurring. This measure will effectively lower sheet flow velocities and reduce sediment loads to perimeter fencing. In addition, silt fencing around soil stockpiles will be employed.

As sediment collects along the silt fences, they will be cleaned to maintain desired removal performance and prevent structural failure of the fence. Accumulated sediment will be removed when sixty (60) percent of the storage capacity of the silt fence is full. Removed sediment will be stockpiled and characterized in a similar manner as impacted soils on the DeLaval property. The perimeter silt fences will remain in place until construction activities in the area are completed and vegetative cover or other erosion control measures are adequately established.

Silt fences will be provided and installed in accordance with the New York Guidelines for Urban Erosion and Sediment Control.

Straw bales will be used to intercept sediment-laden runoff from storm water channels as needed during various phases of construction. Additional straw bale dikes may be necessary in some areas during some phases of construction. Use of straw bales will be limited to swales and/or diversion ditches where the anticipated flow velocity will not be greater than five feet per second (fps). Where flows may eventually exceed five fps along a swale or diversion ditch, an intermediate straw bale barrier will be installed up-gradient of the final bale barrier. The intermediate bale barrier will effectively reduce flow velocities and sediment load to the final barrier.

As with the silt fencing, accumulated sediment on the up-gradient side of the barrier will be removed whenever sixty (60) percent of the storage capacity of the straw bale barrier has been reached in order to maintain performance of the barrier and prevent overtopping or failure of the straw bale barrier. Removed sediment will be stockpiled and characterized for the same parameters as the excavated soils in the AOCs at a rate of one sample per every 500 cubic yards of sediment collected. Sediment that meets the SCGs can be stockpiled and reused as fill at the site; however, any sediment exceeding the SCGs will be managed in a similar manner as the contaminated on-site soils and will be disposed of off-site.

Sediment laden straw bales that have lost their structural integrity and/or effectiveness will be disposed of off-site as a solid waste. Straw bale barriers will remain in place until construction activities contributing sediment to the barrier are complete and vegetative cover or other erosion control measures are adequately established. Straw bales will be provided and installed in accordance with the New York Guidelines for Urban Erosion and Sediment Control.

As a result of phased construction and split construction schedule, a portion or portions of the DeLaval property may be left in an intermediate/incomplete condition(s). Intermediate areas may include rough graded areas awaiting fine grading or areas still requiring placement of the final soil cap system. In intermediate areas where activities will not resume for a period in

excess of two weeks, the disturbed areas will be seeded with a quick germinating variety of grass or covered with a layer of straw mulch. The temporary cover will act to stabilize the soil and reduce erosion. As construction progresses, areas containing temporary vegetation or straw mulch can be covered without removal of the temporary vegetation or mulch.

3.3.1.2 Permanent Erosion Control Measures

Permanent erosion control measures and facilities will be incorporated during cover construction and during site redevelopment for long-term erosion protection, but are not considered part of the remedial construction under the ROD. All permanent measures will be implemented by the developer completing the redevelopment of the DeLaval property. Permanent measures and facilities will be installed as early as possible during construction phases. Parking and building systems associated with redevelopment will not be permitted to include dry wells or other subsurface injections/disposal piping or facilities.

The remedial construction activities will involve the installation of a cover system including asphalt, concrete, or a soil cover system over the entire site. Permanent erosion control measures incorporate a combination of design features to limit overall erosion and sediment problems to practical design limits, and the placement of permanent facilities during site restoration for long term erosion protection. The soil cover system will be designed based on the following criteria:

- Maximum slope of 33 percent (3 Horizontal:1 Vertical) to limit erosion.
- Minimize the potential contact with, and migration of, waste fill.
- Provide a medium for the growth of vegetation to control erosion.

Design features incorporated into the construction plans to control erosion will include limiting steep slopes, routing runoff to surface water collection channels, limiting flow velocities in the collection channels to the extent practical, and lining collection channels, where appropriate. In areas where flow will be concentrated (i.e.; collection channels) the channel slopes and configuration will be designed to maintain channel stability.

A non-woven geotextile will be installed under all areas to serve as a demarcation layer under the clean cover and to indicate if erosion has extended to or into the subgrade. Following the placement of final cover soils over regraded areas, a revegetation program will be implemented to establish permanent vegetation. Vegetation serves to reduce erosion, enhance evapotranspiration, and improve runoff water quality. Future lawn areas will be seeded in stages as construction is completed with a minimum of one-hundred pounds of seed per acre conforming to the mix that will be specified in the technical specifications for the remedial work.

In addition to the above seed mixture, mulch, mulch blankets, or synthetic fabric will be placed as appropriate to prevent erosion during turf establishment. Mulch will be placed on all slopes less than fifteen percent and a mulch blankets will be used on all slopes greater than fifteen percent. Synthetic erosion control fabric will only be placed in drainage ditches and swales. As an aid to turf establishment, seeded areas will be fertilized with a starter fertilizer.

3.3.2 Site Access & Work Zones

Appropriate work zones will be established prior to commencing intrusive remedial activities at the DeLaval property. Access to the DeLaval property is currently limited by a temporary chain link fencing along the north side, a concrete wall associated with an elevated railroad corridor along the east side, chain link fencing along the south side, and the Hudson River along the west side. There is currently a gate near the northeast corner of the site restricting vehicular access to the site near the intersection of Pine Street and Rinaldi Boulevard; however, the gate provides little restriction to trespassers. Although the site is vacant and there is no apparent attraction of boaters to the site, access to the site from the Hudson River is almost completely unrestricted.

To control access during the remedial activities at the DeLaval property, the north and northeast corner of the site will be secured with a minimum of a six-foot high chain-link fence and new gate. In addition, the tunnel under the railroad on the east side of the property will be secured with fencing and gate. Finally, temporary chain link fencing will be installed along the perimeter of a temporary construction easement in the southwest corner of the project site to facilitate the installation of the

bulkhead. "No Trespassing" signs will be installed on the entrance gate as well as along the fencing on the north and south sides of the site. All fencing will be removed subsequent to the completion of the remedial activities.

Given that there is no apparent attraction to the site from the Hudson River, no fencing will be installed along the approximately 2,200 lineal feet of waterfront. However, additional "No Trespassing" signs will be installed on steel fence posts at a spacing of 250 lineal feet along waterfront to deter potential trespassers from the site.

3.3.2.1 Exclusion Zone

An exclusion zone will be established around each excavation conducted within the AOCs. Because significant contamination is expected to be encountered while excavating in AOC-1 and AOC-2/3, orange construction fencing or other similar barricade along with appropriate signage will be installed around the perimeter of the excavation to keep unauthorized personnel away from intrusive activities. Additional fencing will be placed around all open excavations that are not backfilled to grade at the end of each work day.

While it is anticipated that most of the materials excavated will immediately be loaded into trucks for off-site disposal, it may be necessary to construct temporary containment pads within the exclusion zone to stage materials. The temporary soil containment pads will be of sufficient size to store up to the maximum amount of soil that can be excavated in one day and will be lined with a minimum of 10-mil thick polyethylene sheeting. A one-foot high soil berm will be constructed around the perimeter of the pads to control runoff/run-on to and from the stockpiles. All stockpiles will be covered with 10-mil thick polyethylene sheeting while awaiting loading and off-site disposal to prevent the contaminants from volatilizing into the air and causing odor problems around the project site and/or to prevent surface water from potentially conveying contaminants away from the project site. All sheeting used to cover stockpiles will be properly weighted down to prevent tearing and wind damage.

Additionally, polyethylene sheeting will be placed over the face of all excavations not backfilled at the end of the day to reduce emission of petroleum vapors and reduce fugitive dust generation.

3.3.2.2 Contamination Reduction Zone

A Contamination Reduction Zone will be established adjacent to the Exclusion Zone to facilitate the decontamination of the personnel and equipment that come into contact with the petroleum impacted soils. Personnel working inside the exclusion zone will decontaminate or dispose all soiled clothing in the contamination reduction zone each time the exclusion zone is exited, if the clothing worn becomes soiled. Appropriate equipment, supplies, and personal protective equipment (PPE) will be made available in the contamination reduction zone to facilitate the protection and decontamination of personnel working in the exclusion zone.

All equipment will be decontaminated at the conclusion of the excavation activities and prior to demobilizing equipment from the project site. If appropriate precautions are taken throughout the excavation process, the only equipment requiring decontamination should be limited to the bucket on the excavator, the inside of dump boxes on the trucks used for hauling the soils, and small hand tools. Examples of such precautions include, but are not limited to:

- Efforts will be made to advance the excavation face towards the excavator such that the tracks on the machine do not come into contact with the petroleum impacted soils.
- Where possible, all trucks will be loaded adjacent to the excavation. Care will be taken to ensure that impacted soil is not spilled on the sides of the trucks as they are loaded and that the trucks do not drive through contaminated soils. If wet soils are encountered, dry soils will be placed near the rear tailgate of the truck and wetter soils will be placed near the front of the truck. If the soils are saturated, liners will need to be installed in the dump box or the soils will be stabilized prior to loading to avoid drippage out of the truck during the hauling process.
- Efforts will be made to minimize the amount of equipment and machinery that comes into contact with the impacted soils.

At a minimum, all non-disposable personnel protective clothing will be decontaminated by first washing the soil items with a non-phosphate detergent and potable water mixture, followed by

potable water and distilled water rinses. All disposable/expendable clothing will be placed into plastic trash bags for off-site disposal. At a minimum, all equipment that comes into contact with contaminated soil and groundwater will be decontaminated with a high-pressure stream cleaner.

The Contamination Reduction Zone setup will involve the construction of two temporary decontamination pads. The first decontamination will be constructed in a similar manner as the containment pad and used for the decontamination of personnel and small hand tools. The water generated from decontaminating equipment will be collected by placing 10-mil polyethylene sheeting over an approximately ten-foot by ten-foot area with raised sides and one low spot to direct the water to one corner of the pad. The collected water will be pumped into drums or a temporary storage tank (e.g. polyethylene tank) for characterization and off-site disposal.

The second decontamination pad will be an approximately fifteen (15)-foot wide by twenty-seven (27)-foot long pad used for decontaminating large equipment. The pad will be constructed by placing a six (6) to twelve (12) inch thick crushed stone layer over a 40-mil thick low-linear density polyethylene (LLDPE) liner to facilitate the capture of the wash water. The pad will be sloped to the center where is will be collected in a concrete sump that discharges to a holding tank. Corrugated fiberglass panels will be installed along the two long edges of the pad and the bottom of the panels will extend over the lined pad to control overspray. Wood framing (e.g. 2"x4" wood studs) will be used to hold the fiberglass panels in place. A portable spill containment pad with drive through berms and side panels may be used in lieu of the building a temporary equipment decontamination pad.

Section 3.3.4 describes procedures that will be followed to manage the water generated during the decontamination processes.

3.3.2.3 Support Zone

A Support Zone will be established in close proximity to the Contamination Reduction Zone. It is anticipated that this zone will consist of construction trailers that are staffed by the construction superintendent, a resident engineer, and other project support staff. While the contractor performing

the excavations will provide their own site-specific health and safety plan (HASP) for this project, the support should also be used for the storage of first aid kits, fire extinguishers, PPE for site workers, the HASP, air monitoring equipment, spill containment equipment, etc.

3.3.3 Community Air Monitoring Plan

Air monitoring will be performed by the contractor at the DeLaval property during the remedial construction activities in accordance with the New York State Department of Health (NYSDOH) *Generic Community Air Monitoring Plan (CAMP).* All air monitoring will be conducted on a real-time basis using both hand-held field instruments and perimeter air monitoring stations. All air monitoring readings will be recorded in a logbook and made available for review by both the NYSDEC and NYSDOH. The CAMP developed for the DeLaval project consists of two primary components. The fugitive dust control plan is discussed in 3.3.3.1 while the vapor control plan is discussed in Section 3.3.3.2. Air monitoring will be conducted both upwind and downwind of the construction areas and compared to assess if the construction activities are causing potential airborne migration of contaminants.

Continuous monitoring will be required for all ground intrusive activities, such as soil excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells. Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil samples and the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well bailing/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells near a busy urban street or adjacent to a residence.

The CAMP is not intended for use in establishing action levels for worker respiratory protection that are otherwise described in the site-specific HASP prepared for the DeLaval project. Rather, its intent is to provide a measure of protection for the downwind community (i.e. off site receptors including

residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of the proposed remedial work activities. Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP will help prevent the remedial construction activities from spreading contamination off site through the air.

In addition to air monitoring, the faces of any open excavations within the AOCs will be covered with 10-mil thick polyethylene sheeting to control dust and odors at the site at the end of each day, unless field screening indicates that the limits of the contaminated soil have been reached, or all excavations are backfilled.

3.3.3.1 Fugitive Dust Control

Dust emissions may occur at the project site during intrusive remedial activities, including but not limited to, excavation and loading activities. Therefore, fugitive dust control measures will be implemented during all excavation/construction activities. Fugitive dust is described as discrete particles, liquid droplets or solids, which become airborne and contribute to air quality as a nuisance and threat to human health and the environment.

The United States Environmental Protection Agency (USEPA) has set the standard for particulate matter that may impact human health as those particulates less than ten microns in diameter (PM_{10}), regardless of whether the particulate materials is contaminated or not. This number is based upon values considered to be protective of human health with an adequate margin of safety. The primary standards established to protect human health are a fugitive dust concentration of a maximum of 150 micrograms per cubic ($\mu g/m^3$) meter of a 24-hour averaging period and 50 $\mu g/m^3$ over an annual average time.

The NYSDEC's TAGM 4031 – Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites provides guidance for monitoring particulate matter at impacted

sites and suppressing fugitive dust. Although the TAGM was originally developed for use at hazardous waste sites, the TAGM provides a basis for the developing a dust control plan at the DeLaval property, particularly due to the identified metal contaminants in both the surface and subsurface soils at the site.

The following particulate monitoring program and fugitive dust suppression program, as identified in TAGM 4031, will be implemented at the DeLaval property:

1. Reasonable fugitive dust suppression techniques will be employed during all site activities which may generate fugitive dust.
2. Particulate monitoring will be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Such activities shall also include the excavation, grading, or placement of clean fill, and control measures therefore should be considered.
3. Particulate monitoring will be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM_{10}) with the following minimum performance standards:

    - Object to be measured: dust, mists, aerosols
    - Size range: <0.1 to 10 microns (μm)
    - Sensitivity: 0.001milliagram per cubic meter (mg/m^3)
    - Range: 0.001 to 10 mg/m^3
    - Overall Accuracy: ±10% as compared to gravimetric analysis of stearic acid or reference dust
    - Operating Conditions:

        Temperature: 0 to 40 degree Celsius (^oC)
        Humidity: 10 to 99 percent Relative Humidity

    - Power: Battery operated with a minimum capacity of eight hours continuous operation
    - Automatic alarms are required to indicate exceedance of the action level

    Particulate levels will be monitored immediately downwind at the working site/exclusion zone and integrated over a period not to exceed 15 minutes. Consequently, instrumentation shall require necessary averaging hardware to accomplish this task. The P-5 Digital Dust

Indicator as manufactured by MDA Scientific, Inc., or a similar instrument, is appropriate and will be used during the remedial program.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the entity operating the equipment to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 $\mu g/m^3$over the integrated period not to exceed 15 minutes. While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 $\mu g/m^3$, the upwind background level must be measured immediately using the same portable monitor. If the working site particulate measurement is greater than 100 $\mu g/m^3$ above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7 below). Should the action level of 150 ug/m^3 be exceeded, the NYSDEC's Division of Air Resources must be notified in writing within five working days; the notification must include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM_{10} at or above the action level. Since this situation has the potential to transport contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

    - Applying water on haul roads.
    - Wetting equipment and excavation faces.
    - Spraying water on equipment during excavation and dumping.
    - Hauling materials in properly tarped and watertight containers.
    - Restricting vehicle speeds to ten miles per hour or less.
    - Covering excavated areas and material after excavation activity ceases.
    - Reducing the excavation size and/or number of excavations.

Experience has shown that utilizing the above-mentioned dust suppression techniques, within reason as not to create excess water which would result in unacceptable wet conditions and the need to manage the excess water, the chance of exceeding the 150 micrograms per cubic meter action level during site remediation is remote. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. If the dust suppression techniques being utilized at the site do not lower particulates to an acceptable level (that is, below 150 $\mu g/m^3$ and no visible dust), work must be suspended until appropriate corrective measures are approved to remedy the situation. The use of dust suppressant materials (e.g. calcium chloride) will not be permitted without the written authorization of the NYSDEC. Also, the evaluation of weather conditions will be necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, remedial actions may need to be temporarily suspended.

Organic vapor will be conducted simultaneously with the dust monitoring program and is described further below.

3.3.3.2 Organic Vapor Control

Based upon the investigation conducted at the DeLaval property and the documented petroleum contamination, minor emissions of organic vapors are expected while excavating in AOC-1 and AOC-2/3. Based upon the NYSDOH's Generic CAMP, VOCs will be monitored by the contractor at the downwind perimeter of the immediate work area (i.e. the exclusion zone) on a continuous basis or as otherwise specified when the potential for VOC emissions exist. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions.

The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above

background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but are less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but is no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level in the downwind work area perimeter exceeds the upwind perimeter concentration by more than 25 ppm, the Major Vapor Emission Response Plan will be initiated. Under this plan, the following actions will be taken:

  1. All work will be halted.
  2. All Emergency Response Contacts identified in the Site-Specific Health and Safety Plan, including the local police and fire departments, will be contacted by the site Safety Officer.
  3. The NYSDEC, NYSDOH, and the City of Poughkeepsie officials will be notified of the situation.
  4. Air monitoring will be conducted at 15 minute intervals at a 20-foot offset from the exclusion zone. If two successive readings are measured by the field instrument and documented, the work may resume following the previously described monitoring plan.

All fifteen minute readings will be recorded and be available for State (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

3.4 PROPOSED EXCAVATION ACTIVITIES

A number of excavation activities will be conducted as part of the remedial construction. Existing topsoil will be removed in phases to minimize the potential for soil erosion from the site. Initially, the topsoil removal will be limited to areas along the shoreline where the existing relieving platform must be demolished to facilitate the installation of the bulkheads.

Under the ROD for the DeLaval property, the topsoil stripped from the site may be used as backfill material for a portion of the excavation in AOC-1. Backfilling with topsoil is limited to this area because the topsoil is rich in organic content and will not meet the specifications for structural backfill. Topsoil will not be considered as an acceptable fill material in utility trenches, paved areas, building footprints, or other areas where settling of the ground surface is considered undesirable. Any surplus topsoil not reused on site will be disposed of off-site along with the grossly-contaminated soils.

Once the bulkhead portions of the shoreline stabilization project have been completed, the other remedial activities will be started. The primary remedial activity that will commence immediately following the installation of the bulkheads will be the proposed exactions in the AOCs. While these excavation activities can commence prior to the completion of both bulkheads, the installation of bulkhead down-gradient of an AOC must be completed before excavation in that AOC will be permitted.

After the site controls are in place and the pre-excavation sample results have been obtained, the topsoil covering AOC-1 and AOC-2/3 will be stripped. The excavations in AOC-1 and AOC-2/3 will then continue in all directions (typically from west to east) until the limits of the grossly-contaminated soils are reached. All excavations in AOCs will be permitted only under the supervision of the Engineer or a representative from the NYSDEC. During all excavations, the soils will be screened for evidence of contamination at a maximum frequency of one time per every ten cubic yards of soil excavated. To avoid safety concerns with regard to entry into the excavations, the Contractor will screen soil in the excavator bucket (or other equipment) prior to unloading.

The designated excavations shown on the Contract Drawings that are prepared during final design will be for reference only and the actual limits of the excavations in AOC-1 and AOC-2/3 will based on the field screening results of the soils as they are excavated. The depth of the excavations will typically limited to the depth at which groundwater is encountered or the depth at which evidence of gross-contamination is no longer encountered. However, in areas where significant impacts are observed, the NYSDEC may direct the remedial contractor to excavate beneath the groundwater

table. While these excavations will be conducted during periods of low tide, any construction wastewater generated from the dewatering of excavations will be managed in accordance with Section 3.3.4 of this plan.

In addition to using visual and olfactory screening methods for identifying contamination, the soils will be screened for contamination using a PID as they are excavated. Soils that are determined to be grossly-contaminated based upon the field screening process will be direct loaded in trucks for off-site disposal or placed on temporary soil containment pads for further characterization and covered with a minimum of 10-mil thick polyethylene sheeting.

All impacted soil will be dewatered and stabilized, if necessary, loaded into the appropriate transport containers and covered to prevent airborne migration of the contaminants during transportation. All waste will be transported in accordance with the USDOT requirements. All necessary waste documentation (e.g. waste manifests or bills of lading) will be supplied by the waste facility and submitted to the Engineer and City of Poughkeepsie for record keeping purposes. Any material requiring off-site disposal and temporarily stockpiled on site shall be placed on temporary containment pads and covered. Such stockpiles will not be permitted to exceed 200 cubic yards of material each.

After the excavations in AOC-1 and AOC-2/3 are complete, the excavations will be backfilled with on-site material to an elevation at least one-foot higher than the mean high water level. Orange construction fencing or similar barricade will then be placed around the remaining excavation until the forty-five (45) day period in which the redevelopment contractor is permitted to work on the project site is complete. The redevelopment contractor will then utilize other acceptable on-site fill from trenching activities associated with utilities and rough grading activities for fill within the excavations. The City's Engineer will provide oversight of these activities, but the Developer will be solely responsible for the proper placement and compaction of these materials.

After the forty-five (45) day period is complete, the non-woven geotextile demarcation fabric will be placed across the site. Any remaining fill required to raise the AOC excavation grades up to the surrounding grade will be certified to be "clean" in accordance with the Contract Documents and

placed on top of the demarcation layer. The remedial contractor will then install a one-foot soil cover layer over the site and demobilize. As is discussed in Section 3.6, the Contract Documents include an alternate for installing topsoil on the project site and establishing vegetation, should the Developer not be prepared to take responsibility for the site and controls at the conclusion of the remedial activities.

3.5 TRANSPORTATION OF CONTAMINATED MATERIALS

All soil and materials requiring off-site disposal will be dewatered and stabilized, if necessary, loaded into the appropriate transport containers and covered to prevent airborne migration of the contaminants during transportation. All waste will be transported in accordance with the New York State Department of Transportation (NYSDOT) requirements. All necessary waste documentation (e.g. waste manifests or bills of lading) will be supplied by the waste facility and submitted to the Engineer and the City of Poughkeepsie for record keeping purposes.

The remedial Contractor must comply with all federal, state, and local regulations regarding transportation and disposal of non-hazardous material. These include, but are not limited to, the following:

1. Trucks used for transportation of material for disposal off-site shall be permitted pursuant to 6 NYCRR Part 364.
2. Vehicle operator must possess as valid commercial driver's license with hazardous materials endorsement (if applicable).
3. Registration of the vehicle as a hazardous waste carrier (if applicable).
4. Utilization of shipping papers and/or hazardous waste manifests (6 NYCRR Part 372).
5. Proper marking and placarding of vehicles.
6. Placement of emergency response procedures and emergency telephone numbers in vehicle, and operator familiarity with emergency response procedures.
7. Compliance with load height and weight regulations.

3.6 CONSTRUCTION WASTEWATER MANAGEMENT

Construction wastewater may be generated from the removal/pumping of groundwater from excavations, runoff/run-on control operations in the AOCs, and the decontamination of personnel and equipment.

Pumping and collection of such water will be done in a manner to prevent the migration of particulates or soil/fill, and to prevent damage to the existing subgrade materials. All water collected from excavations and decontamination pads will be managed properly in accordance with all applicable regulations so as to prevent endangerment of human health, property, or any portion of the construction.

The groundwater collected from excavations within AOC-1 or AOC-2/3 and the decontamination pads will be collected and stored in drums of temporary storage tanks (e.g. polyethylene tanks or frac tanks) that are approved and labeled in accordance with United States Department of Transportation (USDOT) requirements. The water collected will be sampled by the remedial contractor on a frequency of one sample per every ten drums or one sample per every 2,000 gallons of water collected in larger vessels. However, more frequent sampling may be directed by the NYSDEC, should observable changes in the water quality be identified in the field.

The water that is located between the existing bulkhead walls and new sheeting bulkhead will consist primarily of river water. While this water will be removed and managed as construction water prior to the placement of the fill soil between the bulkheads, the water will not be continually removed prior to that time. Instead, absorbent pads and booms will be used to collect any oil droplets or sheen observed on the water surface until the area is backfilled. The Hudson River water surface will be monitored closely during the remedial construction for evidence of sheen, but breaches in the newly installed bulkhead are considered unlikely.

The water samples will be analyzed for TCL VOCs and TCL SVOCs, TCL PCBs and the TAL metals previously described in Section 3.1 of this SMP. The results will be compared to the NYSDEC's *Technical and Operational Guidance Series (TOGS) 1.1.1 of "Ambient Water Quality*

Standards and Guidance Values and Groundwater Effluent Limitations" for fresh (Class GA) Groundwaters (1998). Although a Class GA groundwater is considered a source of drinking water, it is the only set of standards and guidance values established for groundwater in TOGS 1.1.1.

If no analytes are detected in the groundwater samples at concentrations at or above the groundwater standards and guidance values established by the NYSDEC, and there is no evidence of sheen or free product on the water surface or strong odors associated with the contained water, it may be discharged on the ground surface in a manner that does not cause erosion and allowed to infiltrate into the ground surface or discharged to a municipally owned sewer system. However, the turbidity of the water must be reduced to a minimum of 50 Nephelometric turbidity units (NTUs) through filtering of settling processes prior to discharge. Discharging the collected water directly to the Hudson River will not be permitted.

If petroleum compounds are detected in the groundwater sample in excess of the groundwater standards and guidance values established in TOGS 1.1.1 or visual (e.g. sheen on the water surface), olfactory, or photoionic evidence of contamination are observed during the excavation activities, all of the water will be pumped into temporary holding tanks. In addition to removing the turbidity in the groundwater prior to discharge, it will also be necessary to remove the organic contaminants. The removal of the petroleum contaminants may be accomplished using one of the following techniques or other approved methods:

- The collected water will be treated on-site using a granular activated carbon (GAC) system. The collection of pre- and post-treatment samples will be necessary to demonstrate the continued effectiveness of the carbon treatment. Removal of sediments prior to treating the groundwater will be crucial to avoid plugging and premature fouling of the carbon unit(s).

- The excavation contractor could obtain a permit from the local publicly-owned treatment works (POTW) or sewer authority to discharge the impacted water into a nearby sanitary sewer system. Additional characterization of the water would likely be necessary before issuance of a permit.

- The excavation contractor could transport the construction wastewater to a permitted disposal/recycling facility. Additional characterization would be necessary prior to transporting the water. The water will need to be transported in accordance with all USDOT requirements.

Oil-absorbent pads will be deployed on the water surface if sheen is observed in the groundwater within the excavation area. Temporary construction wastewater storage containers will conform to both New York State and Federal requirements. Appropriate controls will be used to prevent spills and overflows, including but not limited to, monitoring, gauging, quick-close shut-off valves, and secondary containment. All storage containers will be decontaminated following disposal or discharge activities. Any residual sediment in the storage containers will be dewatered/stabilized, if necessary, and disposed of off-site in a similar manner as the contaminated soils in AOC-1 and AOC-2/3.

Water present in excavations outside the AOCs and not generated as part of the decontamination processes on-site will be field screened for elevated readings with a PID, presence of a sheen or free product on the water surface, and/or strong odors. If the water in these areas does not exhibit any field evidence of contamination, it may be discharged to the ground surface in areas outside the AOCs and allowed to infiltrate in a manner that does not result in erosion. However, the turbidity of the water must be reduced to a minimum of 50 NTUs through filtering of settling processes prior to discharge. No surface water discharges to the Hudson River will be permitted.

3.7 CONFIRMATORY SAMPLING

A minimum of twelve (12) confirmatory soil samples will be collected by the remedial contractor in each AOC after the maximum extent of the proposed excavation is reached, two (2) from the face of each excavation (e.g. north, west, south, and east) and four (4) from the bottom of each excavation. Although the intent of the excavation activities is not to remove all impacted soil, these samples will provide record information that may be useful for future intrusive activities within the limits of each AOC. It is not anticipated that the confirmatory samples soil samples will show no evidence of contamination. The soil samples will be submitted to a certified laboratory and analyzed for the same parameters as the pre-excavation samples, as described in Section 3.1 of this plan.

All sample locations should clearly be marked on a field sketch that is to be submitted to the Engineer and the City of Poughkeepsie along with the analytical laboratory results. These results

will also be included in the engineering certification report which will be prepared at the conclusion of the remedial phase of the project.

3.8 SITE RESTORATION

After the proposed excavation activities within the AOC are complete all temporary containment pads, decontaminations pads, disposable equipment, etc. will be dismantled and disposed of off-site at a properly permitted facility or salvaged. However, the equipment decontamination pad will be left on the site for use by the redevelopment contractor unless the remedial Contractor is otherwise directed. The remedial Contractor will be required to empty and clean out the sump and holding tanks prior to demobilizing as well as replacing the top two (2) inches of crushed stone on the pad.

All fill used to backfill the excavations above the demarcation layer should be "clean" and should have no petroleum contaminants in excess of the soil cleanup objective concentrations established in NYSDEC's TAGM 4046. All backfill shall be compacted in accordance with the project Contract Documents.

The redevelopment contractor will be responsible for stabilizing the project site following the completion of all remedial tasks. However, should the Developer not be prepared to take over the site at the conclusion of the remedial activities, the remedial Contractor will place topsoil across the project site and establish vegetation in accordance with the Contract Documents.

During the redevelopment construction, all disturbed areas not covered with impervious surfaces shall be seeded and mulched within two weeks of completing the excavation activities. All topsoil, seed, and mulch materials shall meet the requirements established in the Contract Documents. Silt fencing will be left in place until vegetation is established on site.

4.0 HEALTH & SAFETY

All contractors conducting remedial activities or performing redevelopment activities involving intrusive work on the DeLaval property will be required to prepare a site-specific and activity-specific Health and Safety Plan (HASP). The Contractor will not be permitted to commence with construction until the HASP has been accepted by the Engineer and NYSDEC. Safety is of prime importance in performing work under this Contract. Acceptance of the Plan does not waive any responsibility of the Contractor to ensure the HASP is adequate to comply with all regulations or compliance by personnel. The City of Poughkeepsie (the Owner), the Engineer, nor the NYSDEC assume, in any manner, the control or responsibility of the Contractor to provide safe working conditions of the contractor's employees or subcontractors in requiring the Contractor to follow general safety requirements. The contractors shall maintain the following items on the site at a minimum:

- A copy of the HASP
- First aid kit
- Fire extinguisher(s)
- Personal protective equipment (PPE)
- Air monitoring equipment and calibration equipment
- Spill containment equipment and cleanup materials

To facilitate the creation of appropriate HASPs by the contractor(s) performing work on the site, the range of concentrations of contaminants detected in soil and groundwater samples previously collected at the DeLaval property have been included in Appendix A. Additionally, copies of the reports detailing the procedures and findings of these site investigations are available at the NYSDEC's Albany and New Paltz offices and in the City of Poughkeepsie's Development Office.

All on-site workers must comply with the requirements of the HASP. The Contractor's HASP must comply with all applicable federal and state regulations protecting human health and the environment from the hazards posed by activities during this site remediation. The project design

documents will further specify the health and safety requirements of this project. However, the general health a safety responsibilities and definitions are summarized below.

4.1 HEALTH & SAFETY DEFINITIONS

1. **Authorized Visitor:** The Safety Officer (SO) has primary responsibility for determining who is qualified and may enter the site. The Site Safety Officer will only allow authorized visitors with written proof that they have been medically certified and trained in accordance with 29 CFR 1910.120 (40-Hour Hazardous Waste Operations and Emergency Response training) to enter the contamination reduction zone and/or exclusion area.

2. **Contamination Reduction Zone:** An area at the Exit Point of the Exclusion Zone through which all personnel, vehicles, and equipment must enter and exit. All decontamination of vehicles and equipment and removal of personal protective clothing and breathing apparatus must take place at the boundary between the Exclusion Zone and the Contamination Reduction Zone.

3. **Contractor Support Zone:** An area of the Contractor Work Area outside the Exclusion Zone, accessible for deliveries and visitors. No persons, vehicles, or equipment may enter these areas from the Exclusion Zone without having gone through specified decontamination procedures in the adjacent Contamination Reduction Zone.

4. **Contractor Work Area**: An area of the project site including the Support Zone, access roads, staging areas, and the Exclusion Zone.

5. **Exclusion Zone:** The innermost area within the Contractor Work Area that encloses the area of contamination. Protective clothing and breathing apparatus as specified in the health and safety requirements and in the Contractor's approved HASP must be worn.

6. **Health and Safety Coordinator (HSC):** The HSC shall be a Certified Industrial Hygienist (CIH) or Certified Safety Professional (CSP) retained by the Contractor. The HSC will be responsible for the development and implementation of the HASP.

7. **Health and Safety Technicians (HST):** The HST(s) will be the Contractor's on-site personnel who will assist the SO in the implementations of the HASP, in particular, with air monitoring in active work areas and maintenance of safety equipment.

8. **Medical Consultant (MC):** The MC is a physician retained by the Contractor who will be responsible for conducting physical exams as specified under the Medical Monitoring Programs in this section.

9. **Monitoring:** The use of direct reading field instrumentation to provide information regarding the levels of gases and/or vapor, which are present during remedial action. Monitoring shall be conducted to evaluate employee exposures to toxic materials and hazardous conditions.

10. **Project Personnel:** Project personnel include the Contractor, subcontractor, and Federal, and State, and local Representatives, working or having official business at the Project Site.
11. **Project Site:** The project site includes the entire DeLaval Property.
12. **Safety Officer (SO):** The SO will be the Contractor's on-site person, who will-, be responsible for the day-to-day implementation and enforcement of the HASP.
13. **Staging Areas:** Areas within the Exclusion Zone for the segregated temporary staging of uncontaminated and contaminated soil and debris.
14. **Work:** Work includes all labor, materials, and other items that are part of site redevelopment activities.

4.2 RESPONSIBILITIES

The Contractor shall:

1. Be responsible and liable for the health and safety of all on-site personnel and off-site community impacted by the site redevelopment activities.

2. Ensure all OSHA health and safety requirements are met (29 CFR 1910 – General Industry Safety and Health Standards and 29 CFR 1926 – Construction Industry Safety and Health Standards) and be responsible for compliance with all federal and state regulations.

3. Ensure that all project personnel have been trained in accordance with 29 CFR 1910.120.

4. Perform all work in a safe and environmentally acceptable manner. The Contractor will provide for the safety of all project personnel and make all reasonable efforts to protect the environment and community during the remedial activities. Barricades, warning lights, roped-off areas, and proper signs shall be furnished in sufficient amounts and locations to safeguard the project personnel and public at all times.

5. Employ an SO who shall be assigned full-time responsibility for all tasks herein described under this HASP and be on-site during all remedial activities. In the event the SO cannot meet his responsibilities, the Contractor shall be responsible for obtaining the services of an "alternate" SO meeting the minimum requirements and qualifications. No work will proceed on this project in the absence of an approved SO.

6. Ensure that all project personnel have obtained the required physical examination prior to and at the termination of work covered by the contract.

7. Be responsible for the pre-job indoctrination of all project personnel with regard to the HASP and other safety requirements to be observed during work, including but not limited to (a) potential hazards, (b) personal hygiene principles, (c) personal protection

equipment, (d) respiratory protection equipment usage and fit testing, and (e) emergency procedures dealing with fire and medical situations.

8. Be responsible for the implementation of this HASP and the Emergency Contingency and Response Plan.

9. Provide and ensure that all project personnel are properly clothed and equipped and that all equipment is kept clean and properly maintained in accordance with the manufacturer's recommendations or replaced as necessary.

10. Will perform all site redevelopment work in a safe and environmentally acceptable manner. The Contractor will provide for the safety of all project personnel and the community for the duration of the redevelopment activities.

11. Have sole and complete responsibility for safety conditions for the project, including safety of all persons (including employees).

12. Maintain a chronological log of all persons entering the project site. It will include organization, date, and time of entry and exit. Each person must sign in and out.

13. Maintain and keep available safety records, up-to-date copies of all pertinent safety rules and regulations, material safety data sheets, the Contractor's site-specific HASP, and the emergency response plan.

14. Hold safety meetings, including routine on-site safety meetings.

15. Stop work whenever a work procedure or a condition at the work site is deemed unsafe by the SO.

4.3 ELEMENTS OF THE HEALTH & SAFETY PLAN

A site-specific HASP will be prepared in accordance with OSHA regulations and 29 CFR 1910.120. The will contain the following elements at a minimum:

- All items identified in OSHA regulations 29 CFR 1910.120(b)(4).
- Organization and responsibilities of the project/health and safety team along with emergency phone numbers.
- Characterization of the chemical, biological, and physical hazards present at the site.
- Identification and evaluation of all site hazards/risks (task specific).

- A description of the medical monitoring program for on-site personnel.
- A summary of the real-time air-monitoring program to be conducted during remedial activities.
- Site control measures
- Instructions on the selection and use of personal protective equipment (PPE) and action levels for upgrading or downgrading PPE.
- Proper delineation of work zones.
- Decontamination procedures for both equipment and on-site personnel.
- An accident prevention and contingency plan.
- Other applicable procedures relative to Hazard Communication (Right-to-Know) Program, first aid procedures, cold/heat stress, confined space entry, hot work permits, lockout/tagout, spill containment program, etc. and material safety data sheets for all chemicals brought onto the project site.

4.4 COMPLIANCE

Once the HASP is accepted, it will become part of the contract documents. Consistent disregard for the provision of the HASP by the remedial Contractor and/or his subcontractors or employees shall be deemed just and sufficient to cause for stoppage of work by the Owner. However, not part of the time lost due to such stop orders shall be made the subject of a claim for extension of time or for additional costs or damages incurred by the Contractor. Furthermore, compliance with the minimum requirements in this document does not relieve the Contractor from the responsibility for implementing proper health and safety procedures during unanticipated conditions throughout the duration of the remedial contract.

APPENDIX A

Range of Contaminants & Concentrations at the DeLaval Property

Summary of Analytical Results for Surficial Soils
DeLaval Property Supplemental Investigation, July 2004

Contaminant of Concern	Standard, Criteria and Guidance Value	Concentration Range Detected[1]	Frequency of Samples Exceeding SCGs
SVOCs (units in micrograms per kilogram (µg/kg))			
Acenaphthylene	41,000	140-8,000	0 of 30
Acenaphthene	50,000	120-430	0 of 30
Anthracene	50,000	74-18,000	0 of 30
Benzo(a)anthracene	224	85-150,000	23 of 30
Benzo(a)pyrene	61	160-100,000	24 of 30
Benzo(b)fluoranthene	1,100	85-180,000	18 of 30
Benzo(g,h,i)perylene	50,000	110-25,000	0 of 30
Benzo(k)fluoranthene	1,100	150-64,000	10 of 30
Bis(2-Ethylhexyl)phthalate	50,000	220-6,100	0 of 30
Carbazole		79-490	Detected in 7 of 30
Chrysene	400	81-130,000	21 of 30
Dibenz(a,h)anthracene	14	100-120	2 of 30
Dibenzofuran	6,200	110-230	0 of 30
Fluoranthene	50,000	140-320,000	2 of 30
Fluorene	50,000	80-280	0 of 30
Indeno(1,2,3-cd)pyrene	3,200	88-16,000	2 of 30
2-Methylnapthalene	36,400	160-310	0 of 30
Naphthalene	13,000	250-420	0 of 30
Phenanthrene	50,000	130-92,000	1 of 30
Pyrene	50,000	130-260,000	2 of 30
PCBs (units in micrograms per kilogram (µg/kg))			
Aroclor-1260	1,000	50-3600	3 of 30
METALS (units in milligrams per liter (mg/L))			
Arsenic	7.5	4.89-24.8	20 of 30
Barium	300	15.1-374	2 of 30
Cadmium	1 or SB (1.93)	0.973-8.7	25 of 30
Chromium	10 or SB (15.8)	5.94-627	17 of 30
Lead	500	22.8-908	22 of 30
Selenium	2	0.602-3.20	6 of 30
Silver	SB (0.117)	0.149-240	12 of 30
Mercury	0.1	0.02-1.30	21 of 30

Note: 1. If a single value is noted, the referenced parameter was detected either only one time, or multiple times at the same concentration.

Summary of Analytical Results for Subsurface Soils
Supplemental Investigation of the DeLaval Property, July & August 2004

Contaminant of Concern	Standard, Criteria and Guidance Value	Concentration Range Detected[1]	Frequency of Samples Exceeding SCGs
VOCs (units in micrograms per kilogram (µg/kg))			
Acetone	200	34-3,500	4 of 22
Benzene	60	43-2,300	2 of 22
Carbon Disulfide	2,700	1.6-56	0 of 22
Chlorobenzene	1,700	13,000	1 of 22
Ethylbenzene	5,500	3.5-530	0 of 22
Methylene Chloride	100	2.6-67	0 of 22
Toluene	1,500	2.8-320	0 of 22
Tetrachloroethene	1,400	4.1-110	0 of 22
m/p-Xylene (Total)	1,200	1.1-4,900	2 of 22
o-Xylene	1,200	0.47-1300	1 of 22
SVOCs (units in micrograms per kilogram (µg/kg))			
Acenaphthylene	41,000	210-850	0 of 21
Acenaphthene	50,000	140-1500	0 of 21
Anthracene	50,000	62-3,300	0 of 21
Benzo(a)anthracene	224	130-11,000	13 of 21
Benzo(a)pyrene	61	96-14,000	11 of 21
Benzo(b)fluoranthene	1,100	77-19,000	5 of 21
Benzo(g,h,i)perylene	50,000	48-3,200	0 of 21
Benzo(k)fluoranthene	1,100	65-7,100	4 of 21
Bis(2-Ethylhexyl)phthalate	50,000	44-280	0 of 21
Carbazole		100-550	Detected in 4 of 21
Chrysene	400	120-13,000	10 of 21
Dibenz(a,h)anthracene	14	95-420	3 of 21
Dibenzofuran	6,200	59-160	of 21
Fluoranthene	50,000	250-18,000	of 21
Fluorene	50,000	49-1,800	of 21
Indeno(1,2,3-cd)pyrene	3,200	56-2,200	0 of 21
2-Methylnapthalene	36,400	54-7,500	of 21
Naphthalene	13,000	91-490	0 of 21
Phenanthrene	50,000	180-10	0 of 21
Pyrene	50,000	61-18,000	0 of 21
PCBs (units in micrograms per kilogram (µg/kg))			
Aroclor-1254	10,000	97-11,000	1 of 21
Aroclor-1260	10,000	60-340	0 of 21
METALS (units in milligrams per liter (mg/L))			
Arsenic	7.5	0.306-35.5	12 of 21

Contaminant of Concern	Standard, Criteria and Guidance Value	Concentration Range Detected[1]	Frequency of Samples Exceeding SCGs
Barium	300	10.1-1,900	4 of 21
Cadmium	1 or SB (1.93)	0.307-21.7	11 of 21
Chromium	10 or SB (15.8)	4.17-1,730	13 of 21
Lead	500	16.4-17,200	12 of 21
Selenium	2	0.564-9.18	7 of 21
Silver	SB (0.11)	0.206-1.13	7 of 21
Mercury	0.1	0.01-1.4	7 of 21

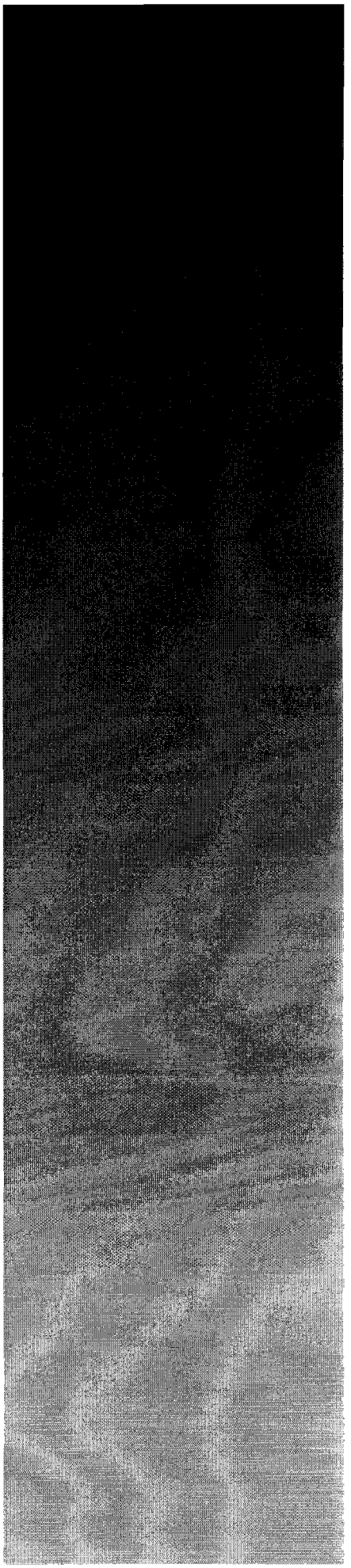
Note: 1. If a single value is noted, the referenced parameter was detected either only one time, or multiple times at the same concentration.

Summary of Analytical Results for Groundwater
Supplemental Investigation of the DeLaval Property, August & October 2004

Contaminant of Concern	Standard, Criteria and Guidance Value	Concentration Range Detected[1]	Frequency of Samples Exceeding SCGs
VOCs (units in micrograms per kilogram (µg/kg))			
cis-1,2-Dichloroethene	5	0.77 - 49	1 of 8
Trichloroethene	5	0.67 - 5.0	1 of 8
SVOCs (units in micrograms per kilogram (µg/kg))			
Acenaphthene	20[2]	2.6	0 of 8
Bis(2-Ethylhexyl)phthalate	5	1.2-1.8	0 of 8
Di-n-butylphthalate	50[2]	3.9	0 of 8
Fluorene	50[2]	2.2	0 of 8
Naphthalene	10	1.5	0 of 8
Phenanthrene	50[2]	1.1	0 of 8
PCBs (units in micrograms per kilogram (µg/kg))			
Aroclor-1260	0.09	0.31 - 4.7	2 of 9
METALS (units in milligrams per liter (mg/L))			
Barium	1,000	16.1-204	0 of 8
Chromium	50	1.8-3.1	0 of 8
Lead	25	21-39.2	1 of 8
Mercury	0.7	0.03-0.08	0 of 8

Note: 1. If a single value is noted, the referenced parameter was detected either only one time, or multiple times at the same concentration.

2. Indicates value is a guidance value rather than a standard.



CLOUGH HARBOUR & ASSOCIATES LLP

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to, the excavation of trenching, backfilling, compacting, dewatering, protection and disposal, as shown on the Contract Drawings, and as herein specified.

B. The Contractor shall accept the site in the condition in which it exists at the time of award of the Contract.

C. The Engineer will determine the suitability of materials that are to be used in the work and should any materials encountered be unsatisfactory for the purpose intended, they shall be removed from the site at the Contractor's expense.

1.2 QUALITY ASSURANCE

A. Reference Standards:

1. The latest edition of the following standards, as referenced herein, shall be applicable.

a. "Standard Specifications, Construction and Materials, New York State Department of Transportation, Office of Engineering."

b. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)."

c. American Society for Testing and Materials (ASTM).

B. The Contractor shall comply with the requirements for soil erosion and sedimentation control and other requirements of governmental authorities having jurisdiction, including the State of New York.

C. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of soils and aggregate with the specifications, in accordance with Section "Quality Requirements."

1.3 SUBMITTALS

A. Samples:

1. The Contractor shall furnish representative earth materials to the testing laboratory for analysis and report, as directed by the Engineer, or as outlined in the specifications.

B. Test Results:

1. The testing laboratory shall submit written reports of all tests, investigations, findings and recommendations to the Contractor and the Engineer.

1.4 PROJECT REQUIREMENTS

A. Notify the Engineer of any unexpected subsurface condition.

B. Protect excavations by shoring, bracing, sheet piling, or by other methods, as required to ensure the stability of the excavation. Comply with OSHA requirements.

C. Underpin or otherwise support structures adjacent to the excavation which may be damaged by the excavation. This includes service lines.

D. Protection of Existing Utilities:

1. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations. Comply with OSHA requirements.

2. Coordinate interruption and/or termination of utilities with the utility companies and the Owner.

3. Provide a minimum of forty-eight (48) hours notice to the Owner and receive written notice to proceed before interrupting any utility.

4. Demolish and completely remove from the site any existing underground utilities designated to be removed, as shown on the Drawings or as specified in Section "Clearing and Grubbing."

5. Repair any damaged utilities as acceptable to the Owner, Engineer, and utility company at no additional cost to the Owner.

E. Protection of Persons and Property:

1. Barricade open excavations occurring as part of this work and post with warning lights, if required.

2. Operate warning lights as recommended by authorities having jurisdiction.

3. Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

4. Perform excavation within drip-line of large trees to remain by hand, and protect the root system from damage or dryout to the greatest extent possible. Maintain moist conditions for root system and cover exposed roots with burlap. Paint root cuts of one-inch diameter and larger with emulsified asphalt tree paint.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: All soil/gravel materials shall be imported from a "virgin" soil borrow source. Written documentation shall be provided to the Owner and Engineer to document that the soil is native material from areas not having supported any known prior industrial or commercial development or agricultural use.

B. Pipe Zone Bedding: Select mixture of graded crushed stone, free from organic, frozen or other deleterious materials, conforming to the requirements of NYSDOT Section 703-02 and meeting the following gradation requirements (NYSDOT Size 2):

Sieve	Percent Passing
11/2"	100
1	90 - 100
1/2"	0- 15

C. Pipe Zone Backfill: Sound, durable sand, gravel, stone or blends of these materials, free from organic, frozen or other deleterious materials, conforming to the requirements of NYSDOT Section 304 and meeting the following gradation requirements (NYSDOT Subbase Type 4):

Sieve	Percent Passing
2"	100
1/4"	30 - 65
No. 40	5 - 40
No. 200	0 - 10

D. Suitable Material: Sound, durable sand, gravel, stone or blends of these materials, free from organic, frozen or other deleterious materials, conforming to the requirements of NYSDOT 203-2.02C and meeting the following gradation requirements:

Sieve	Percent Passing
4"	100
No. 40	0 - 70
No. 200	0 - 15

Run-of-trench material, meeting the above criteria, shall be considered suitable material and shall be used for trench backfill only after tested in accordance with Section "Quality Control Services" and approved by the Engineer. The Contractor shall pay for all additional testing required to determine the conformance of run-of-trench material, if at any time during the Work this material appears to be in non-conformance in the opinion of the Engineer.

PART 3 - EXECUTION

3.1 PRECONSTRUCTION MATERIAL QUALIFICATION TESTING

A. General:

1. Sufficient size samples shall be obtained from the potential borrow source to allow completion of tests listed in paragraph B below. Samples may be obtained from test borings, test pits, or from borrow pit faces provided that surficial dry or wet soil is removed to expose undisturbed earth. Tests listed below shall be performed on each sample obtained. A minimum of three (3) representative samples from each potential borrow source shall be furnished to the testing laboratory for prequalification testing. Test data shall be provided to the Engineer a minimum of 2 weeks prior to construction for approval of borrow source. Three test reports completed within three months prior to construction may be submitted for commercial earth borrow sources or suppliers of stone products (crushed stone or NYSDOT graded stone products) in lieu of prequalification tests as approved by the Engineer.

B. Material Tests:

1. Particle Size Analysis:

a. Method: ASTM D422
b. Number of Tests: One (1) per sample; three (3) per potential source.
c. Acceptance Criteria: Gradation within specified limits.

2. Maximum Density Determination:

   a. Method: ASTM D698 - Standard Proctor
   b. Number of Tests: One (1) per sample; three (3) per potential source.

3. Re-establish gradation and maximum density of fill material if source is changed during construction.

3.2 PREPARATION

A. Establish required lines, levels, contours and datum.

B. Maintain benchmarks and other elevation control points; re-establish if disturbed or destroyed, at no additional cost to the Owner.

C. Establish location and extent of existing utilities prior to commencement of excavation.

3.3 EXCAVATION

A. All excavation shall be made by open cut to such depth as required and of the width shown on the Contract Drawings.

B. The bottom of the trench shall be accurately graded to provide a uniform layer of bedding material, as required. Trim and shape trench bottoms and leave free of irregularities, lumps, and projections.

C. Stockpile excavated subsoil for reuse where directed or approved. Remove excess or unsuitable excavated material from site in accordance with the approved Site Management Plan included at the end of Section 02200 "Earthwork".

D. Excavation Below Grade: If, in the opinion of the Engineer, existing material below the trench grade is unsuitable for properly placing bedding material and laying pipe, the Contractor shall excavate and remove the unsuitable material and replace the same with an approved fill material properly compacted.

E. Stability of Excavation: Slope sides of excavations shall comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavation in safe condition until completion of backfilling.

F. Removal of materials beyond the indicated subgrade elevations, without authorization by the Engineer, shall be classified as unauthorized excavation and shall be performed at no additional cost to the Owner.

3.4 DEWATERING

A. The Contractor shall remove all water from the excavation promptly and continuously throughout the progress of the work and shall keep the excavation dry at all times until the trench is backfilled. If necessary, in the opinion of the Engineer, well points, deep wells, or other means shall be used to lower the ground-water level, and observation wells shall be installed to confirm that groundwater levels are lowered as specified. Well points, if used, shall be shifted frequently to avoid drainage from too long a distance.

B. All water removed from the excavations shall be collected and managed in accordance with the Site Management Plan included at the end of Section 02200 "Earthwork".

3.5 BEDDING AND BACKFILLING

A. All pipe trenches backfill (pipe zone bedding, pipe zone backfill and trench backfill) shall be compacted by tamping or rolling to achieve a minimum dry density of 90 percent of the standard Proctor maximum dry density of the material used (ASTM D698). Backfill in pipe trenches to be covered with pavement shall be compacted to a minimum of 98 percent of standard Proctor maximum dry density. Backfill materials shall be placed with water content within plus or minus 4 percent of optimum moisture content per the standard Proctor method (ASTM D698). Any water used for compaction shall be provided by the Contractor at his own expense. The approval of the Engineer of the proposed method of compaction of backfill shall in no way be construed as relieving the Contractor of responsibility of settlement of trenches, etc. and any settlement shall be repaired by him at his own expense.

B. Bedding and backfilling shall be accomplished in three stages unless otherwise specified on the Contract Drawings. The first stage shall involve placement of "pipe zone bedding" as a layer(s) of selected material required to support, or to stabilize unsound or unsatisfactory foundation conditions. The second stage shall involve placement of "pipe zone backfill" from the top of the bedding material up to one (1) foot above the pipe. The third stage involves the placement of "trench backfill" in the remainder of the trench up to the surface of the ground or the bottom of any special surface treatment subgrade elevation.

C. The bedding material shall be placed in the trench after the trench has been excavated a minimum of eight (8) inches below the bell of the pipe to permit the placing of not less than eight (8) inches of bedding material unless otherwise specified on the Contract Drawings. Where, in the opinion of the Engineer, more than eight (8) inches of bedding material shall be required, the excavation shall be performed and bedding placed to the depth ordered by the Engineer.

D. The bedding material shall be placed to the full width of trench. The bedding material shall be placed in loose lifts not exceeding six (6) inches to the elevation shown on the Contract Drawings or directed by the Engineer. The bedding material shall be tamped and compacted to form a firm and even bearing surface.

E. Pipe zone backfill shall be placed to the elevation shown on the Contract Drawings in loose lifts not-to-exceed six (6) inches in thickness, before compaction. The backfill shall be placed on both sides of the pipe at the same time and to approximately the same elevation. Any pipe that is damaged or moved out of alignment, regardless of cause, shall be replaced or realigned at the Contractor's expense. Each layer shall be thoroughly compacted by hand-tamping or mechanical means being careful not to damage the pipe. When the pipe zone backfill reaches one (1) foot over the top of the pipe, the entire surface shall be compacted by mechanical means.

F. The remainder, if any, of the trench above the pipe zone backfill shall be backfilled with select granular fill in loose lifts not exceeding six (6) inches in thickness before compaction. Each layer shall be thoroughly compacted by mechanical means.

3.6 BACKFILLING AROUND STRUCTURES

A. The Contractor shall not place backfill against any structure without obtaining the approval of the Engineer. No dumping shall be allowed where materials would flow against or around such structures. Backfill material shall be deposited in horizontal layers not exceeding 8 inches in loose thickness or as shown on the Contract Drawings and thoroughly compacted by hand or pneumatic tampers to the satisfaction of the Engineer.

3.7 SUSPENSION OF WORK

A. Whenever the work is suspended, excavations shall be protected and the roadways, if any, left unobstructed. Within or adjacent to private property, material shall be stored at such locations as will not unduly interfere with traffic of any nature and in no case shall materials be stored in locations which will cause damage to existing improvements.

3.8 DISPOSAL OF MATERIAL

A. To the extent possible, all material excavated for utility trenches will be stockpiled and used for backfill material in the areas of concern as directed by the Engineer.

B. Excess and unsuitable materials shall be disposed of off-site at the Contractors expense in accordance with the Section 02221 "Site Management Plan".

3.9 FIELD QUALITY CONTROL

A. Notify the Engineer at least one (1) working day in advance of all phases of filling and backfilling operations.

B. In-place density testing shall be performed to ascertain the compacted density of the fill and backfill materials in accordance with the following methods:

1. In-place relative density:

a. Method: AASHTO T191, Sand Cone Method
AASHTO T238, Nuclear Method

C. In-place density tests on trench backfills shall be provided for every 500 cubic yards of fill and in vertical lifts not exceeding two (2) feet, and at least once daily.

D. One particle size analysis (ASTM D422) and one standard Proctor compaction test (ASTM D698) shall be competed for every 5,000 cubic yards of material placed.

E. The Engineer may direct additional tests to establish gradation, maximum density, and in-place density as required by working conditions, at the Contractor's expense.

F. Acceptance Criteria: The criteria for acceptability of in-place fill shall be in-situ dry density and moisture content. If a test fails to qualify, the fill shall be further compacted and re-tested. Subsequent test failures shall be followed by removal and replacement of the material.

END OF SECTION 02221

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to, furnishing and installing geotextile fabric as shown on the Contract Drawings and as specified herein.

1.2 QUALITY ASSURANCE

A. The latest edition of the following standards, as referenced herein, shall be applicable.

1. American Society for Testing and Materials (ASTM).

1.3 SUBMITTALS

A. Product Data:

1. Submit Manufacturer's catalog cuts, specifications and installation instructions.

B. Samples:

1. Submit a one (1) square yard piece of each type of fabric.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Delivery:

1. Deliver sufficient materials to the site to prevent interruption of the work.

2. All materials shall be inspected by Contractor upon delivery. Contractor shall notify Engineer of any damage. Products received at the site torn, with holes, deteriorated, or otherwise damaged will not be approved and shall be returned and replaced at no expense to the Owner.

B. Storage:

1. All material shall be stored in strict accordance with the manufacturer's recommendations and as approved by the Engineer.

2. All material shall be stored so as to be protected from wind, rain, excess moisture, or sunlight. Material shall be wrapped in an opaque, protective cover until ready for use.

C. Handling:

1. All material shall be handled in strict accordance with the manufacturer's recommendations and as approved by the Engineer.

PART 2 - PRODUCTS

2.1 MATERIAL PROPERTIES

A. The demarcation barrier shall be Mirafi 160N or approved equal that meets the following properties.

Property	Design Value	Test Method
Tensile Strength	160 lbs (min)	ASTM D4632
Elongation	50% (max)	ASTM D4632
Burst Strength	305 psi (min)	ASTM D3786
Puncture Strength	95 lbs (min)	ASTM D4833
A.O.S.	70	ASTM D4751
Permittivity	1.4 sec^{-1} (min)	ASTM D4491
Weight	6.4 oz/yd^2 (min)	ASTM D5261

PART 3 - EXECUTION

3.1 GENERAL

A. The Contractor shall be responsible for the storage, handling, installation, and seaming of geotextile fabric in accordance with the specifications and the manufacturer's recommendations, as approved by the Engineer.

3.2 SUBBASE PREPARATION

A. Surfaces to be covered with geotextile fabric shall be smooth and free of rocks, sticks, roots, sharp objects, and all debris that may damage the fabric. The surface to be covered shall be firm and unyielding, with no sudden changes or breaks in grade. There shall be no standing water or excessive moisture on the surface when the fabric is placed.

B. The compacted subbase shall be maintained in a smooth, uniform and compacted condition during installation of the fabric.

3.3 GEOTEXTILE INSTALLATION

A. The fabric shall be cleaned of all debris or other materials that may negatively affect the fabric's performance.

B. Mechanical equipment shall not be permitted to operate directly on the fabric unless authorized to do so by the manufacturer and approved by the Engineer.

C. Geotextile Placement

1. Fabric shall be placed as recommended by the manufacturer and approved by the Engineer on surfaces which have been prepared to conform with these Specifications and found acceptable for fabric installation.

2. The fabric shall be placed as smooth and wrinkle-free as possible. All successive sheets shall be overlapped a minimum of 12 inches. All laps/butt joints shall be at least 36 inches in width without tension, stress, folds, or creases.

3. Separation fabric for the bottom of the drainage layers shall be placed so that laps are parallel to the water flow within the layer. If specific site conditions in certain areas do not allow for placement in this manner the upstream fabric shall lap over the downstream fabric.

4. In areas where wind is prevalent, fabric installation shall be started at the upwind side of the project and proceed downwind. The leading edge of the fabric shall be secured at all times with sandbags or other means sufficient to hold it down during high winds.

5. Sandbags or rubber tires may be used as required to hold the fabric in position during installation. Tires shall not have exposed steel cords or other sharp edges which may snag or cut the fabric. Materials, equipment or other items shall not be dragged across the fabric or be allowed to slide down slopes on the fabric.

6. Smoking shall not be permitted by personnel working on the fabric.

7. All areas of fabric damaged during installation as determined by the Engineer shall be repaired by the Contractor as specified at no additional cost to the Owner.

8. At time of installation, fabric will be rejected if it has defects, ribs, holes, flaws, deterioration, or damage incurred during manufacture, transportation, handling, or storage. Damaged materials shall be removed and replaced at no additional cost to the Owner.

9. Fabric shall be placed with long dimension down slope.

10. Fabric shall be protected at all times during construction from contamination by surface run-off and any fabric so contaminated shall be removed and replaced with uncontaminated fabric.

D. Seams and Overlaps of Geotextile:

1. All overlaps shall be a minimum of thirty-six inches.

2. Joints shall be sewn or bonded unless otherwise noted. Securing pins shall not be used.

3.4 GEOTEXTILE REPAIR

A. Should the fabric be damaged during any step of the installation, the damaged section shall be repaired by covering it with a piece of fabric which extends at least thirty-six inches in all directions beyond the damaged area. The fabric shall be secured by sewing or bonding as approved by the Engineer.

3.5 COVER MATERIALS OVER GEOTEXTILES

A. Soil cover layer materials shall be placed on geotextile as shown on the Contract Drawings. During back dumping and spreading, a minimum depth of six inches of granular material shall be maintained at all times between the fabric and wheels of trucks or spreading equipment. All equipment used in spreading or traveling on the cover layer for any reason shall exert low ground pressures and shall be approved by the manufacturer and Engineer. Dozer blades, etc. shall not make direct contact with the fabric; however, if tears occur in the fabric during the spreading operation, the granular material shall be cleared from the fabric and the damaged area repaired as previously described.

B. The granular material shall be spread in the direction of fabric overlap. Large fabric wrinkles which may develop during the spreading operations shall be folded and flattened in the direction of the spreading. Occasionally, large folds may reduce the fabric overlap width. Special care shall be given to maintain proper overlap and fabric continuity.

C. All equipment spreading cover material or traveling on the cover layer shall avoid making sharp turns, quick stops or quick starts.

D. Fabric shall be covered as soon as possible after placement to minimize exposure to sunlight. Fabric shall not be exposed for more than seven days.

3.6 DISPOSAL OF SCRAP MATERIALS

A. On completion of installation, the Contractor shall dispose of all trash and scrap material off-site or in a location approved by the Owner and Engineer, remove equipment used in connection with the work herein, and shall leave the premises in a neat acceptable manner.

END OF SECTION 02240

SECTION 02241 GEOTEXTILE FABRIC (SHORELINE WORK)

PART 1 - GENERAL

1.1 WORK SPECIFIED

A. The Work covered by this Section of these Specifications consists of furnishing all plant, labor, supervision, equipment, appliances and materials and in performing all operations in connection with the installation of geotextile fabric. The primary function of the geotextile is filtration; all in strict accordance with this Section of the Specifications and the applicable drawings, and subject to the terms and conditions of the Contract.

1.2 SUBMITTALS

A. Submit the pre-qualified list of subcontractors to the Engineer for review.

B. Certification: The contractor shall provide to the Engineer a certificate stating the name of the manufacturer, product name, style number, chemical composition of the filaments or yarns and other pertinent information to fully describe the geotextile. The Certification shall state that the furnished geotextile meets MARV requirements of the specification as evaluated under the Manufacturer's quality control program. The Certification shall be attested to by a person having legal authority to bind the Manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Manufacturer:

Mirafi Construction Products
365 South Holland Drive
Pendergrass, GA, USA 30567
1-888-795-0808
1-706-693-2226
1-706-693-2083, fax
www.mirafi.com

B. Geotextile:

1. The geotextile shall be manufactured with fibers consisting of long-chain synthetic polymers composed of at least 95 percent by weight of polyolefins or polyesters. They shall form a stable network such that the filaments or yarns retain their dimensional stability relative to each other, including selvages.

2. Woven slit film geotextile (i.e., geotextile made from yarns of a flat, tape-like character) shall not be allowed.

3. The geotextile shall meet the requirements of Table 1. All numeric values in Table 1 except AOS represent MARV in the weakest principal direction. Values for AOS represent maximum average roll values.

4. Acceptable geotextiles are as follows:

Elongation < 50%: Mirafi Filterweave 700

TABLE 1 - SUBSURFACE DRAINAGE GEOTEXTILE

Property	Test Method	Units	Elongation < 50%[1]
Grab Tensile Strength	ASTM D 4632	N (lbs)	1100 (247)
Sewn Seam Strength[2]	ASTM D 4632	N (lbs)	990 (222)
Tear Strength[3]	ASTM D 4533	N (lbs)	400 (90)
Puncture Strength	ASTM D 4833	N (lbs)	400 (90)
Burst Strength	ASTM D 3786	kPa (psi)	2700 (391)
Permittivity	ASTM D 4991	sec^{-1}	0.2
Apparent Opening Size	ASTM D 4751	mm (U.S. Sieve)	0.25 max (60)
Ultraviolet Stability[4]	ASTM D 4355	%	50

[1] A measured in accordance with ASTM D 4632
[2] When sewn seams are required.
[3] The required MARV Tear Strength for woven monofilament geotextiles is 250 N (56 lbs)
[4] After 500 hrs

C. Quality Control:

1. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section and qualified by the Geosynthetic Accreditation Institute (GAI) Laboratory Accreditation Program (LAP) and by the American Association for Laboratory Accreditation (A2LA).

2. The Owner reserves the right of approval of the subcontractor pre-qualified and selected for this portion of the Work by the Contractor. Approval will be based, in part, on documented successful experience in performing work of a similar nature.

3. Manufacturing Quality Control: Testing shall be performed at a laboratory accredited by GAI-LAP and A2LA for tests required for the geotextile, at frequency meeting or exceeding ASTM D 4354.

4. Geotextile properties, other than Sewn Seam Strength, Burst Strength, and Ultraviolet Stability shall be tested by NTPEP to verify conformance with this specification.

5. Sewn Seam Strength shall be verified based on testing of either conformance samples obtained using Procedure A of ASTM D 4354, or based on manufacturer's certifications and testing of quality assurance samples obtained using Procedure B of ASTM D 4354. A lot size for conformance or quality assurance sampling shall be considered to be the shipment quantity of the given product or a truckload of the given product, whichever is smaller.

6. Ultraviolet Stability shall be verified by an independent laboratory on the geotextile or a geotextile of similar construction and yarn type.

D. Product Delivery and Storage:

1. Geotextile labeling, shipment, and storage shall follow ASTM D 4873. Product labels shall clearly show the manufacturer or supplier name, style name, and roll number.

2. Each geotextile roll shall be wrapped with a material that will protect the geotextile from damage due to shipment, water, sunlight, and contaminants.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Preparation

1. Excavation shall be done in accordance with details of the project plans. In all instances excavation shall be done in such a way so as to prevent large voids from occurring. The graded surface shall be smooth and free of debris.

B. Installation

1. The geotextile shall be placed loosely with no wrinkles or folds, and with no void spaces between the geotextile and the ground surface. Successive sheets of geotextile shall be overlapped a minimum of 300 mm (12 in), with the upstream sheet overlapping the downstream sheet.

2. In trenches equal to or greater than 300 mm (12 in) in width, after placing the drainage aggregate the geotextile shall be folded over the top of the backfill material in a manner to produce a minimum overlap of 300 mm (12 in). In trenches less than 300 mm (12 in) but greater than 100 mm (4 in) wide, the overlap shall be equal to the width of the trench. Where the trench is less than 100 mm (4 in) the geotextile overlap shall be sewn or otherwise bonded. All seams shall be subject to the review of the Engineer.

3. Should the geotextile be damaged during installation or drainage aggregate placement, a geotextile patch shall be placed over the damaged area extending beyond the damaged area a distance of 300 mm (12 in), or the specified seam overlap, whichever is greater.

4. Placement of drainage aggregate should proceed immediately following placement of the geotextile. The geotextile should be covered with a minimum of 300 mm (12 in) of loosely placed aggregate prior to compaction. If a perforated collector pipe is to be installed in the trench, a bedding layer of drainage aggregate should be placed below the pipe, with the remainder of the aggregate placed to the minimum required construction depth.

5. The aggregate should be compacted with vibratory equipment to a minimum of 95 percent Standard AASHTO density unless the trench is required for structural support.

END SECTION 02241

SECTION 02270 RIPRAP SHORE PROTECTION

PART 1 - GENERAL

1.1 WORK SPECIFIED

A. The Work covered under this Section of these Specifications consist of furnishing all plant, labor, supervision, equipment, appliances and materials and in performing all operations in connection with and in strict accordance to the Contract Documents. The Work covered under this Section includes furnishing and installing riprap shore protection as indicated on the Contract Documents.

1.2 SUBMITTALS

A. Submit the pre-qualified list of subcontractors and the proposed schedule of unit prices to the Engineer for review.

B. Submit material gradation, moisture density curve, and representative material sample for each material proposed for use.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Stone shall conform to the NYSDOT Standard Specifications Section 620-2.02. All stone shall be of a quality to insure permanence of the structure in the climate in which it is to be used. The stone shall be free from organic debris, durable, sound, free from detrimental cracks, seams, and other defects which tend to increase deterioration from natural causes or cause breakage in handling or placement. Organics, sand, clay, chert and rock fines are prohibited. The stone shall be selected granite, quartzite, rhyolite, or limestone.

B. Size of riprap stone shall be as meet the following gradation requirements:

1. Fine

Stone Fill	**Percent Passing by Weight**
< 8 inch	90-100
> 3 inch	50-100
< #10 Sieve	0-10

2. Light

Stone Fill	**Percent Passing by Weight**
< 100 lbs	90-100
> 6 inch	50-100
< ½ inch	0-10

3. Medium

Stone Fill	**Percent Passing by Weight**
> 100 lbs	50-100
< 4 inch	0-10

4. Heavy

Stone Fill	Percent Passing by Weight
> 600 lbs	50-100
< 6 inch	0-10

C. Bedding stone shall conform to the NYSDOT Standard Specifications Section 620-2.05 and shall meet the following gradation requirements:

Stone Fill	Percent Passing by Weight
4 inch	100
I inch	15-60
¼ inch	0-25
No. 4	0-10

PART 3 - EXECUTION

3.1 INSTALLATION

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. The Engineer, reserves the right of approval of any Subcontractor pre-qualified and selected for this portion of the Work by the Contractor. Approval will be based, in part, on:

1. Documented successful experience in performing work of a similar nature.

2. Acceptable schedule of unit prices for measurement and payment in event of changes in the Work of this Section.

C. Stone shall be placed in a manner to produce a well-graded mass without causing displacement of the underlying material. The finished surface shall be free from pockets of small stones and clusters of large stones.

END SECTION 02270

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes provisions for temporary soil erosion and water pollution control through the use of sediment basins, erosion control blankets, stone, mulches, grasses, sediment control (silt) fencing, and other devices shown on the Drawings or within the Stormwater Pollution Prevention Plan (SWPPP), or directed by the Engineer.

B. Installation of permanent erosion control devices is included in other Division 2 sections.

C. The SWPPP is included immediately following Section 02271 "Temporary Soil Erosion and Water Pollution Control" and is considered part of the Contract Documents.

1.2 REFERENCES

A. "New York Standards and Specifications for Erosion and Sediment Control, Soil And Water Conservation Society (SWCS), (August 2005)."

B. "Standard Specifications, Construction and Materials New York State Department of Transportation, Office of Engineering."

1.3 SYSTEM DESCRIPTION

A. Control erosion of soil and pollution of water through the use of the temporary devices specified herein and described within the SWPPP. Implement additional control measures as required to control erosion due to sequencing of work and miscellaneous construction activities. Maintain, adjust, relocate and supplement devices to ensure complete control of erosion and prevention of water pollution.

1.4 SUBMITTALS

A. Submit product data, samples, specifications and manufacturer's installation procedures.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements:

1. Comply with Federal, State and Local requirements for erosion and sedimentation control.

2. Obtain and comply with all necessary construction permits.

3. In the event of a conflict between these requirements and other laws, rules or regulations, comply with the more restrictive requirements.

1.6 PROJECT CONDITIONS

A. Coordinate the use of temporary erosion control measures with permanent erosion control features specified elsewhere to ensure effective and continuous erosion control.

1.7 MAINTENANCE

A. Inspect and maintain all sedimentation and erosion control devices as specified in the SWPPP.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Erosion Control Blankets - "Curlex II Blanket" by AMXCO, "S150" by North American Green, or equal.

B. Stone - NYSDOT Section 620-2.03, Light and Section 620-2.04, Medium, Round Washed Stone Fill per replacement Detail 8 (Stone-Lined Pilot Channel) Sheet C6.06.

C. Mulch - Hay, straw, wood chips, or other suitable material reasonably clean of weeds and deleterious material.

D. Grasses - Rye grass, cereal grasses, or other quick-growing species suitable to the area and as a temporary cover, which will not compete with the grasses specified for permanent cover.

E. Sediment Control (Silt) Fencing - "Envirofence" by Mirafi, "Propex Silt Stop" by Amoco, or equal.

PART 3 - EXECUTION

3.1 GENERAL

A. Perform all work under this contract in such a manner that objectionable conditions will not be created in water courses through or adjacent to the project area.

B. In the event of conflict between these specification requirements and pollution control laws, rules or regulations of other Federal or State local agencies, comply with the more restrictive laws, rules or regulations.

C. Follow Erosion and Sediment Plan within SWPPP for erosion and sediment control measure layout.

D. Install Perimeter Devices (including the turbidity curtains) prior to any soil or vegetation disturbance.

E. Install dam devices in ditches as the ditches are formed.

F. Do not remove erosion control until the entire area has been permanently stabilized, at the discretion of the Owner or Engineer.

3.2 INSTALLATION

A. The Contractor shall limit to five acres the surface area of erodible earth material exposed by clearing and grubbing, the surface area of erodible earth material exposed by excavation, borrow and fill operations and shall provide immediate permanent or temporary erosion control measures to minimize damage to adjacent property and to minimize contamination of adjacent streams or other watercourses, lakes, ponds or other areas of water impoundment as outlined in the SWPPP.

B. Incorporate all permanent erosion control features into the project at the earliest practical time as outlined in the schedule. Temporary control measures are those that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

C. Where erosion is likely to be a problem, schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately thereafter if the project conditions permit; otherwise temporary erosion control measures may be required between successive construction stages.

D. Establish temporary grass cover on disturbed areas prior to finish grading and seeding, as outlined in the SWPPP or as determined appropriate by the Engineer.

END OF SECTION 02271

The DeLaval Property

Stormwater Pollution Prevention Plan

Rinaldi Boulevard & Pine Street
Poughkeepsie, New York, Dutchess County

Prepared for:

City of Poughkeepsie
PO Box 300
Poughkeepsie, New York 12602

Prepared by:

Clough Harbour & Associates LLP
The Galleries of Syracuse
441 South Salina Street
Syracuse, New York 13202
(315) 471-3920

CHA Project Number: 14357

September, 2006

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Project Information:

Project Name and Location
The DeLaval Property
Rinaldi Boulevard & Pine Street
Poughkeepsie, New York

Owner Name and Address
City of Poughkeepsie
P.O. Box 300
Poughkeepsie, NY 12602

Project Description:

Purpose and Extent of Proposed Development

The DeLaval Property is located in the City of Poughkeepsie, Dutchess County, New York. The project site encompasses approximately 13.9 acres and is generally bounded by Metro North Railroad to the east, the Hudon River to the west, Pine Street to the north, and industrial lands to the south.

This SWPPP covers the site development, scheduled to be completed in 2007-2008. More specifically, this development will include the installation of bulk heads and additional shoreline work along the Hudson River, the removal of contaminated soils within two general areas of the property, and the installation of a barrier soil layer across the entire site. Once the remediation work is completed, future plans for the site consist of commercial development, the SWPPP for which will be submitted at a later date.

Project Disturbance Area

Total Disturbed Area:	±13.9 acres
Proposed Total Impervious Area:	±0.0 acres

Sequence of Major Activities:

This SWPPP presents erosion and sediment controls, both temporary and permanent, to assist the operator in compliance with the project's SPDES General Permit for construction activity. To the degree practicable, all temporary erosion and sediment control mitigation measures shall be installed immediately before associated project areas are disturbed in anticipation of all soil disturbing activities to follow.

In general, the following lists the project sequence:

- Install construction entrance.
- Install turbidity curtains.
- Install bulk heads.
- Perform shoreline work.
- Install silt fencing as indicated.
- Demolish structures.
- Complete excavation of Area 1, replace with clean fill and stabilize.
- Complete trench excavation.
- Complete excavation of Area 2, replace with clean fill and stabilize.
- Install HDPE pipe where shown on plans.
- Clear and grub remainder of site.
- Install fabric and barrier protection soil layer to remainder of site.
- Stabilize with mulch. Site will be turned over to developer for permanent stabilization. Should developer not commence work within 14 days, site shall be topsoiled, seeded and mulched.

See sheet ENV-12 for complete sequence.

Name of Receiving Waters

Stormwater entering the project area will discharge to the Hudson River (Class A, Standards A).

Controls:

Erosion and Sediment Controls / Stabilization Practice

For a layout of applicable erosion and sediment control measures, see attached plan sheets EV-11 and EV-12. For Erosion and Sediment Control Details, see plan sheet EV-13.

Temporary Stabilization

Topsoil stockpiles, staging areas and disturbed pervious portions of the project area where construction activity temporarily ceases for at least 21 days shall be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in that area.

Temporary seed shall be Rye (grain) applied at the rate of 30 pounds per acre. Prior to seeding, 2,000 pounds of ground agricultural limestone and 1,000 pounds of 5-10-10 fertilizer shall be applied at a rate per acre to be stabilized. Mulch shall be applied in conjunction with seeding and applied at the rate of 90 lbs per 1000 square feet. Mulch shall be reapplied as necessary. Areas of the project area, which are to be paved, shall be temporarily stabilized by applying temporary gravel subbase until pavement can be applied.

Proposed grades which will have slopes steeper than 3:1 shall be stabilized with erosion control fabric.

Temporary diversion swales shall be installed on site where necessary. Diversion swales are designed to divert runoff around active construction areas to a point of discharge.

Sediment control fencing shall be installed around the site where depicted on the attached plan sheets. Prior to commencing any earthwork, a stabilized construction entrance shall be installed as indicated on the attached plans. This entrance shall be utilized as the exclusive construction entrance and exit to the construction areas. Construction traffic shall be limited to the construction entrance.

Permanent Stabilization

Disturbed portions of the project area where construction activities permanently cease shall be stabilized with permanent seed no later than 14 days after the last construction activity. The permanent seed mix shall be in accordance with the project specifications and plans. Construction and maintenance of erosion and siltation control measures are in accordance with the New York Standards and Specifications for Erosion and Sediment Control.

Where construction activity is complete over areas to be permanently vegetated, stabilize with permanent seeding. Verify seeding dates with engineer. If engineer determines that seed cannot be applied due to climate, topsoil shall not be spread and mulching shall be applied to the exposed surface to stabilize soils until the next recommended seeding period. Other project areas shall be permanently stabilized with pavement, concrete, gravel or building structures.

Stormwater Management and Water Quality Measures

A comprehensive stormwater management report was not needed for this project due to the fact that site conditions are not changed.

Other Controls

Waste Disposal

Waste materials – Foreign waste materials shall be collected and stored in a secured area until removal and disposal by a licensed solid waste management company. All trash and construction debris from the project area shall be disposed of in a portable container unit. No foreign waste materials shall be buried within the project area. All personnel shall be instructed regarding the correct procedure for waste disposal. Notices stating these practices shall be posted in the project trailer and the individual who manages day-to-day project operations will be responsible for seeing that these procedures are followed.

Hazardous Waste - All hazardous waste materials shall be disposed of in a manner specified by local or state regulations or by the manufacturer. Project personnel shall be instructed in these practices and the individual who manages day-to-day project operations shall be responsible for seeing that these practices are followed.

Sanitary Waste - Any sanitary waste from portable units shall be collected from the portable units by a licensed sanitary waste management contractor, as required by NYS DEC regulations.

Sediment Tracking by Vehicles

A stabilized construction entrance shall be installed (where depicted on attached plan) and maintained as necessary to help reduce vehicular tracking of sediment. The entrance shall be cleaned of sediment and redressed when voids in the crushed stone become filled and vehicular tracking of sediment is occurring. Dump trucks hauling materials to and from the construction project area shall be covered with a tarpaulin to reduce dust. Any sediment and debris tracked from work area along project adjacent roadways shall be immediately removed with a street sweeper or equivalent sweeping method. Further, sweeping of streets adjacent to disturbed areas shall be performed prior to the end of each work day (at a minimum) when tracking of sediment is occurring.

Non-stormwater discharges are not expected to exit the project area during construction.

Timing of Controls/Measures

The erosion and sediment control measures shall be constructed prior to clearing or grading of any portion of the project. Where construction activity temporarily ceases for more than 21 days, areas to be vegetated shall be stabilized with a temporary seed and mulch within 14 days of the last disturbance. Where construction activity temporarily ceases for more than 21 days, areas to be paved shall be stabilized with a crushed stone within 14 days of the last disturbance. Once construction activity ceases permanently in an area, that area shall be stabilized with permanent measures. After the entire project area is stabilized, the accumulated sediment shall be removed from the project area. Erosion control devices shall remain in place until disturbed areas are permanently stabilized.

Certification of Compliance with Federal, State, and Local Regulations

The stormwater pollution prevention plan reflects the New York State requirements for stormwater management and erosion and sediment control. To ensure compliance, this plan was prepared in accordance with New York State Standards. There are no other applicable State or Federal requirements for sediment and erosion plans (or permits), or stormwater management plans (or permits).

Maintenance/Inspection Procedures:

Erosion and Sediment Control Inspection and Maintenance Practices

These are the minimum required inspection and maintenance practices that shall be used to maintain erosion and sediment controls:

- All control measures shall be inspected at least once each week and following any storm event of 0.5 inches or greater in a 24 hour period using the "Construction Duration Inspection Form". A copy of this form is included in the "inspection forms" section of this plan.
- A copy of the signed Notice of Intent (NOI) must be posted onsite, in a publicly accessible location.
- A copy of the SWPPP and the SPDES general permit must be retained at the construction site.
- A summary of the project area inspection activities shall be posted monthly in a publicly accessible location. A copy of the "Monthly Inspection Summary Form" is included in the "inspection forms" section of this plan.
- The operator shall prepare a written summary of the SWPPP's status with respect to compliance with the general permit (GP-02-01) at a minimum frequency of every three months during which coverage under the permit exists. The summary should address the status of achieving each component of the SWPPP. A copy of the "Monitoring, Reporting and Three-Month Status Inspection Form" is included in the "inspection forms" section of this plan.
- Prior to filing of the Notice of Termination or the end of permit term, the Operator shall perform a final project area inspection. This inspection shall certify that the project area has undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. A copy of the "Final Stabilization and Retention of Records Inspection Form" is included in the "inspection forms" section of this plan.
- All measures shall be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of report or as ordered by the owner's representatives.
- Built up sediment shall be removed from any silt fence when it has reached one-third the height of the fence.
- Sediment fencing shall be inspected for depth of sediment, and tears, to see if fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
- The construction entrance shall be cleaned of sediment and redressed when voids in the crushed stone become filled and vehicular tracking of sediment is occurring.

- Dust shall be controlled on access points and other disturbed areas subject to surface dust movement and blowing.
- Inspection of diversion swales shall be conducted to check condition of swale.
- Inspection must verify that all practices are adequately operational, maintained properly and that sediment is removed from all control structures.
- Inspection must look for evidence of soil erosion on the site, potential of pollutants entering drainage systems, problems at the discharge points, and signs of soil and mud transport from the site to the public road.
- The site operator or superintendent shall select the individuals who will be responsible for the inspections, maintenance, repair activities, and filling out the inspection and maintenance report.
- Personnel selected for inspection and maintenance responsibilities shall have received proper training in all the inspection and maintenance practices necessary for keeping the erosion and sediment control used on-site in good working order.
- The operator shall retain copies of inspection reports submitted in conjunction with this permit and records or all data used to complete the NOI to be covered by this permit for a period of at least three years from the date that the site is finally stabilized.

Post-Construction Inspection and Maintenance Practices

The City of Poughkeepsie will maintain ownership of the site. Long-term inspection forms for the stormwater management practices (included in the "inspection forms" section of this plan) are referenced from Appendix G of the New York Sate Stormwater Management Design Manual.

Inventory for Pollution Prevention Plan:

The materials or substances listed below are expected to be within the project area during construction:

- Portland cement concrete.
- Fertilizers / seeding materials.
- Stone.
- Petroleum based products.
- Silt fence fabric.
- Bonded fiber matrix material.
- HDPE Geomembrane material.

Spill Prevention:

The following are the material management practices that shall be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.

Good Housekeeping

The following good housekeeping practices shall be followed within project areas during construction:

- An effort shall be made to store only enough products required to do the job.
- All materials stored within project areas shall be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products shall be kept in their original containers with the original manufacturer's label.
- Substances shall not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product shall be used up before disposing of the container.
- Manufacturers' recommendations for proper use and disposal shall be followed.
- The project superintendent shall inspect daily to ensure proper use and disposal of materials.

Hazardous Products

These practices are used to reduce the risks associated with hazardous materials:

- Products shall be kept in original containers unless they are not resealable.
- Original labels and material safety data shall be retained.
- If surplus product must be disposed of, manufacturers' or local and state recommended methods of proper disposal shall be followed.
- Material Safety Data Sheets for all hazardous products shall be within the project area for the duration of construction.

Product Specific Practices

The following product-specific practices shall be followed within the project areas:

Petroleum Products

All project related vehicles shall be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products shall be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used during construction shall be applied according to the manufacturer's recommendations.

Fertilizers

Fertilizers used shall be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer shall be worked into the soil to limit exposure to stormwater. Fertilizers shall be stored in a covered or other contained area.

Paints

All containers shall be tightly sealed and stored when not required for use. Excess paint shall not be discharged to the storm sewer system but shall be properly disposed of according to manufacturer's instructions or State regulations.

Concrete Trucks

Concrete trucks shall be allowed to wash out within project areas provided that the contractor provides an area which collects and contains any concrete / slurry material washed from trucks for recovery and disposal at a later time. No concrete / slurry shall be discharged from the property at any time of construction. If such washing is anticipated, the contractor shall submit a plan detailing the control of concrete / slurry to the engineer for approval.

Spill Control Practices

The contractor will be responsible for preparing a project area specific spill control plan in accordance with local and NYS DEC regulations. At a minimum this plan should:

- Reduce stormwater contact if there is a spill.
- Contain the spill.
- Stop the source of the spill.
- Dispose of contaminated material in accordance with manufactures procedures, and NYS DEC regulations.
- Identify responsible and trained personnel.
- Ensure spill area is well ventilated.

Updating the SWPPP:

The SWPPP shall be updated/revised as conditions merit or as directed by the regulating authority. The attached inspection forms included with this document allows for the certification of any updates/revisions.

SWPPP Certification:

Stormwater Pollution Prevention Plan Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Kathy Harris — *Signature*

11/14/06 — *Date*

Contractor's Certification

I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction project area identified in such SWPPP as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards.

Signature	***Date***
For	
Responsible For	
Signature	***Date***
For	
Responsible For	
Signature	***Date***
For	
Responsible For	

SECTION 02272 TURBIDITY CURTAINS

PART 1 - GENERAL

1.1 WORK SPECIFIED

A. The Work covered by this Section of these Specifications consists of furnishing all plant, labor, supervision, equipment, appliances and materials and in performing all operations in connection with the installation of turbidity curtain. The primary function of the turbidity curtain is to control the settling of soils (silt) suspended in water by providing a controlled area of containment; all in strict accordance with this Section of the Specifications and the applicable drawings, and subject to the terms and conditions of the Contract.

1.2 SUBMITTALS

A. The contractor shall provide to the Engineer the name of the manufacturer, product name and style number, chemical composition of the filaments or yarns and other pertinent information to fully describe the turbidity curtain.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General

Boom Length	50 feet
Flotation Size	6 inch (standard) 8 inch 12 inch
Buoyancy	6 inch: 13 lb/ft 8 inch: 22 lb/ft 12 inch: 54 lb/ft
Curtain Material	100% polypropylene geotextile Type 1 – woven slit film Type 2 – monofilament
Ballast	5/16 inch galvanized chain, 1.1 lb/ft
End Connectors	Aluminum grommeted plates or standard eyelets for lacing
Curtain Depth	Shall have sufficient slack to permit the curtain to rise to the maximum expected high water level including wave action without being overtopped and still be in continuous contact with the bottom.

B. Physical Properties Geotextile Curtain

Property	Test Method	Slit Film	Monofilament
Weight	ASTM D 3776	5 oz/sq yd	6 oz/sq yd
Tensile Strength (Grab)	ASTM D 4632	240 lbs	370 lbs
Elongation at Break	ASTM D 4632	25%	25%
Mullen Burst	ASTM D 3786	480 psi	530 psi
Trapezoid Tear	ASTM D 4533	80 lbs	100 lbs
EOS – US Std. Sieve	CW 02215	40-50	70
Permeability	ASTM D 4491	2.4 gal/sq. yd/sec	2.7 gal/sq. yd/sec
UV Resistance (% retained)	ASTM D 4355	90%	90%

C. Physical Properties Flexible Polypropylene

Property	Test Method	30 mils	40 mils
Weight	ASTM D 3776	2 oz/sq. yd	2.7 oz/sq. yd
Tensile Strength at Break	ASTM D 6693	1644 lb/ft	1507 lb/ft
Elongation at Break	ASTM D 6693	900%	900%
Tear Resistance	ASTM D 1004	10 lbs	14 lbs
Puncture Strength	ASTM D 4833	47 lbs	56 lbs

D. Chemical Resistance of Flexible Polypropylene

Chemical	Good	Marginal	Poor
Acids Inorganic	X		
Bases Organic	X		
Alcohols	X		
Heavy Metals	X		
Acids Organic		X	
Volatile/Semi-Volatile Organics		X	
Oil & Grease		X	
Strong Oxidizers		X	
Aliphatic/Aromatic Halogenated Hydrocarbons			X
Aliphatic/Aromatic Hydrocarbons			X

E. Physical Properties Vinyl Coated Polyester or Nylon

Property	Value
Weight	25 oz/sq. yd
Fabric Strength	20 lbs/in
Temperature Range	0° to 43° F
Tensile Strength	7700 lbs breaking strength of load carrying components

F. Product Delivery and Storage:

1. Turbidity Curtains shall be delivered to and stored at the site in a way recommended by the manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Unless otherwise detailed on the plans, the turbidity curtain shall be installed as follows:

1. Be "anchored" and secured to prevent any material from passing beneath, over, around or through the barrier.

2. Have a flotation system that will float if punctured or cut.

3. Have sufficient slack to permit the curtain to rise to the maximum expected high water level including wave action without being overtopped and still be in continuous contact with the bottom.

4. Have adjacent portions of the curtain secured so that suspended soil particles will not pass between the sections.

5. Not be placed across a flowing stream.

6. Additional anchorage and/or anchorage cables are required in tidal applications.

3.2 MAINTENANCE AND REMOVAL OF CURTAIN

1. The contractor shall immediately repair or replace defective or damaged portions of the turbidity curtain.

2. The turbidity curtain shall remain in place until such time that water contained within is free from turbidity. The curtain shall be removed within 72 hours after this determination has been made.

3. The area behind the turbidity curtain shall be cleared prior to removal. All sediment deposits shall be considered unsuitable material and disposed in accordance with the New York State Department of Transportation Standard Specifications Section 203-3.08, Disposal of Surplus Excavated Materials.

4. At the completion of the contract, the turbidity curtain shall be removed in such a manner so as to minimize release of sediment adhering to the turbidity curtain.

5. After removal the turbidity curtain shall become the property of the Contractor and shall be removed from the site.

END OF SECTION 02272

SECTION 02369 STEEL PIPE SLEEVING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. The Work covered by this Section of these Specifications consists of furnishing all plant, labor, supervision, equipment, appliances and materials and in performing all operations in connection with the installation of the steel pipe sleeves, all in strict accordance with this Section of the Specifications and the applicable drawings, and subject to the terms and conditions of the Contract.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this section.

B. The Project Manager, through the Consulting Engineer, reserves the right of approval of the subcontractor pre-qualified and selected for this portion of the Work by the Contractor. Approval will be based, in part, on:

1. Documented successful experience in performing work of a similar nature;

2. Acceptable schedule of unit prices for measurement and payment in event of changes in the Work of this section.

C. Where existing discharge pipes are not scheduled to be extended, they are to be effectively blocked-off in such a way as to prevent movement or loss of fill.

1.3 SUBMITTALS

A. Submit the pre-qualified list of subcontractors and the proposed schedule of unit prices to the Consulting Engineer for review.

B. Submit steel certificates to the Consulting Engineer for review.

C. Submit non-shrink grout product data to the Consulting Engineer for review.

1.4 PRODUCT DELIVERY AND STORAGE

A. The Contractor shall notify the Consulting Engineer twenty-four hours in advance of delivery of pipes. Contractor guarantees that steel pipes shall be handled in such a manner as to not induce stresses which will damage the materials, and shall be stored in a safe manner within designated areas provided on the site.

PART 2 - PRODUCTS

2.1 STEEL SECTIONS

A. Steel Pipe Sleeves

1. The steel pipe sleeves size shall be as specified on the Contract Drawings or equivalent accepted by the Consulting Engineer. Steel quality shall be a minimum of ASTM A53 Grade B.

B. Arc welding electrodes: Comply with AWS A5.17 or A5.23 series, as required for conditions of intended use.

2.2 PROTECTIVE COATING

A. All steel pipe sleeves shall be epoxy coated in conformance with Section 09905. Damage to the coating during site welding shall be made good as specified.

2.3 GROUT

A. Non-shrink, non-metallic, high performance cementitious grout conforming to ASTM C827 such as Sikagrout 212 as manufactured by Sika Corporation or equivalent accepted by the Consulting Engineer.

PART 3 - EXECUTION

3.1 SUPPORT

A. The Contractor shall provide all temporary support required to adjacent outlets and surrounding areas of the existing bulkhead.

3.2 LINE AND LEVEL

A. The sheet pile sleeves shall be aligned to maintain the slope on existing outlets.

3.3 WELDING

A. Welding shall only be undertaken at low water, and shall be adequately shielded from tidal or wave splashing. All flux shall be removed, and the weld thoroughly cleaned prior to coating.

3.4 CONNECTIONS

A. Where required, pipes are to be constructed through the sleeves from existing outlets. These pipes are to be identical to the existing outlet pipes. The annular gap between the outlet pipe and steel pipe sleeve is to be grouted with non-shrink grout.

END SECTION 02369

SECTION 02375 STEEL SHEET PILES

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

The Work covered by this Section of these Specifications consists of furnishing all plant, labor, supervision, equipment, appliances and materials and in performing all operations in connection with the construction of the AZ steel sheet pile continuous wall bulkhead, all in strict accordance with this Section of the Specifications and the applicable drawings, and subject to the terms and conditions of the Contract.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.

B. The Owner, through the Engineer, reserves the right of approval of the subcontractor pre-qualified and selected for this portion of the Work by the Contractor. Approval will be based, in part, on documented successful experience in performing work of a similar nature.

C. Driving of additional piles at the Contractor's own expense may be required by the Engineer in the event tolerances are exceeded. Drive individual piles plumb within 2%, and in a manner that the completed wall appears vertical when viewed from any point.

D. The Engineer may elect to observe the shop fabrication of the steel sheet piling. The Contractor shall provide the fabrication schedule and allow access for the Engineer to perform this task.

E. The Owner reserves the right to take samples from steel sheet pile material at the site for testing in order to verify compliance with the Specifications.

1.3 SUBMITTALS

A. Submit the pre-qualified list of subcontractors to the Engineer for review.

B. Upon receipt of the Engineer's review of the pre-qualified subcontractor, promptly submit sufficient technical data on the equipment necessary to accurately measure and record pile penetration and capacity during the entire driving of each pile.

C. Submit a detailed Work Plan for review by the Engineer that includes the following:

1. Written description of the means and methods necessary to install the steel sheet piles plumb and straight and protect coating.

2. Falsework layout and temporary bracing plan.

3. Layout plan of steel sheet piles including shop drawings and bill of materials. Provide details of all corners and transitions.

4. Shop drawings of all temporary shoring and falsework components including calculations that demonstrate adequacy of such temporary work.

Steel sheet piles shall not be installed until work plan is reviewed and no exceptions taken by the Engineer.

D. Submit steel certificates for review no later than the time of delivery of materials to the site.

E. Submit three copies of pile driving records within twenty-four (24) hours of installation.

1.4 PRODUCT DELIVERY AND STORAGE

The Contractor shall notify the Engineer twenty-four hours in advance of delivery of steel sheet piles. Contractor guarantees that steel sheet piles shall be handled in such a manner as to not induce stresses which will damage the materials, and shall be stored in a safe manner within designated areas provided on the site.

PART 2 - PRODUCTS

2.1 STEEL SECTIONS

A. Steel Sheet Pile - AZ Sections

1. Steel sheet piling shall be as manufactured by Arbed or equivalent as accepted by the Engineer. Sections shall be as indicated on the Contract Drawings. Steel grade shall be in ASTM A572 Grade 60 steel. Pile length to be as shown on the Drawings.

2. Subject to review of the Engineer, the Contractor may substitute higher section modulus piles at its option to facilitate driving at no additional cost to the Owner.

3. Steel sheet pile sections shall be shop fabricated by "hot-rolled" process. Steel sheet piles (referred to as "singles") shall be shop fabricated from a single piece of stock which is formed into the completed unit by the hot rolling process. "Singles" may be shop assembled (into units referred to as "doubles") after coating and prior to shipping to the site.

B. Welding - Special Conditions

1. Welding will be permitted only where specially fabricated pieces are required as shown on the Drawings, where field welds are scheduled, or where acceptable to the Engineer.

2. Welding shall conform to AWS D1.1 – Steel. Electrodes shall be in accordance with AWS A5.17 or A5.23.

2.2 PROTECTIVE COATING

Unless specifically noted on the Drawings, all steel piles shall be shop coated to a minimum of five (5) feet below the design dredge depth elevation. Protective coating shall conform to Section 09905.

2.3 STEEL PIPE PREPERATION

All holes are to be made in the piling prior to applying the epoxy coating detailed in Section 09905 with the exception of holes to accommodate pipe sleeves for outlets and ground anchors. Field cut holes shall be carefully performed at the required locations in such a manner as to minimize damage to the coating. On completion of the welding of pipe sleeves, all damage to the coating is to be made good in accordance with these Specifications and to the satisfaction of the Engineer.

PART 3 - EXECUTION

3.1 EQUIPMENT

A. Drive the piles with air, diesel, or vibratory hammers with sufficient energy and energy transfer characteristics to drive the piles to the required toe levels without crippling pile heads.

B. Piles are to be located by temporary frames .The frames shall be rigidly located such as to keep the piles plumb and to line while being driven. Piles may be continuously or incrementally driven or driven singly or in pairs, as required to maintain the line and level of the completed bulkhead.

C. Take precautions to avoid contact of coated pile surfaces with components of leads and/or falsework. Install timber rub strips or similar items at contact areas as may be required to reduce the potential for damage of the coating during driving. All damage to the protective coating shall be repaired at the Contractor's expense.

D. Use suitable cushions or driving heads to avoid damage to the piles, developing proper total driving energy, and directing the energy along the longitudinal center of gravity of the pile.

1. Drive sheet piles to their full penetration without bending, rupturing or severely damaging the sheet piles.

2. If failure in any of the above respects is encountered, pull the sheet pile and drive a new pile at no additional cost to the Owner.

3.2 PILE DRIVING

A. Drive the piles straight and true at indicated locations, with deviation from the longitudinal axis of not more than 1/4-inch per foot.

B. Provide the Engineer a complete driving log with date of final installation and tip elevation. This log shall be submitted weekly and signed by a representative of the Contractor.

C. Plug all "lifting eye" holes in steel sheet piling per details on the Drawings.

END SECTION 02375

SECTION 02606 ALTERING EXISTING MAHOLES

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contractor shall provide all labor, material, equipment and services necessary for, and incidental to, the alteration of existing manholes as shown on the Drawings and as specified herein.

B. All alterations shall conform in shape, size, dimensions, and materials to the details shown on the Drawings or as directed by the Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All materials used shall conform to the applicable provisions described in Section "Manholes," except as otherwise specified.

B. Precast Concrete Grade Rings

C. Non Shrink Grout: ASTM C1107

PART 3 - EXECUTION

3.1 CONNECTION TO EXISTING MANHOLES

A. The Contractor shall make connections to existing manholes as shown on the Drawings or as specified herein.

B. For connections to precast or cast-in-place concrete manholes, the Contractor shall core drill a hole one (1) inch larger than the O.D. of the sewer pipe into the existing manhole at the location and elevation shown on the Drawings.

C. For connections to masonry manholes, the Contractor shall open the sidewall of the existing manhole by removing masonry units no more than necessary to accommodate the sewer pipe.

D. Connection methods shall be in accordance with the details shown on the Drawings. Any open spaces around the new pipe entry shall be sealed with non-shrink grout to prevent leakage.

E. Check valves shall be installed on each new inlet pipe as shown on the Drawings.

F. The Contractor shall be responsible for diverting flow through the manhole in order to allow for connection and bench/channel construction.

3.2 CHANGING ELEVATIONS OF EXISTING MANHOLES

A. Lower existing frames of manholes by the removal of appropriate masonry courses, to the elevations shown on the Drawings or as directed by the Engineer.

B. Raise the existing frames of manholes by the addition of appropriate grade rings to the elevations shown on the Drawings or as directed by the Engineer.

C. Where the manhole frames cannot be lowered by removal of masonry courses, such as may be the case with precast concrete manholes, the upper barrel section shall be removed and/or replaced with a section of less depth, to permit the necessary adjustment of the frame.

D. Frames and covers damaged during the Work shall be replaced at the Contractor's expense.

3.3 CLEAN-UP

A. Each manhole, reconstructed or adjusted, shall be cleaned of accumulated silt, debris, or foreign matter prior to final acceptance of the Work.

END OF SECTION 02606

SECTION 02610 BURIED PIPE INSTALLATION

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the installation of buried piping.

1.2 REFERENCES

A. American Society of Testing and Materials (ASTM).

B. American National Standards Institute (ANSI).

1.3 SUBMITTALS

A. Field Test Reports: Submit results of field testing directly to Engineer with copy to Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Conform to individual pipe specification(s).

PART 3 - EXECUTION

3.1 BURIED PIPE INSTALLATION

A. General:

1. Installation of all pipe, fittings, valves, specials and appurtenances shall be subject to the review and/or approval of the Engineer.

2. Install piping as shown, specified and as recommended by the manufacturer and in conformance with referenced standards, and approved Shop Drawings.

3. Request instructions from Engineer before proceeding if there is a conflict between the manufacturer's recommendations and the Drawings or Specifications.

4. All piping shall be inspected by the Engineer prior to installation. Engineer's inspection will not relieve Contractor or manufacturer from responsibility for damaged products.

5. Present all conflicts between piping systems and equipment, structures or facilities to Engineer for determination of corrective measures before proceeding.

6. Take field measurements prior to installation to ensure proper fitting of Work. Uncover the existing pipelines sufficiently in advance of the proposed Work in order that the type and location of the existing pipes and joints and other information required to fabricate the proposed piping can be determined. Obtain whatever information is required to complete the connections of the proposed pipelines to the existing pipelines.

7. Carefully examine all piping for cracks, damage or other defects before installation. Immediately remove defective materials from the site, unless the defective materials can be repaired in a manner acceptable to the manufacturer and Engineer. Remove, replace or repair at the Contractor's expense piping found to be broken or defective.

8. Inspect interior of all piping and mating surfaces and remove all dirt, gravel, sand, debris or other foreign material before installation. Maintain the interior of all piping clean until acceptance of the completed Work. Prevent foreign matter from entering joint space.

9. Install buried piping accurately to line and grade shown, specified or directed, unless otherwise approved by the Engineer. Use accurate means of determining and checking the alignment and grade subject to the approval of the Engineer. Remove and relay piping that is incorrectly installed at Contractor's expense.

10. Do not lay piping in water, unless approved by the Engineer. Ensure that the water level in the trench is at least 6 inches below the bottom of piping. Maintain a dry trench until jointing and backfilling are complete, unless otherwise specified in these Specifications or approved by the Engineer.

11. Start laying piping at lowest point and proceed toward the higher elevations, unless otherwise approved by the Engineer. Slope piping uniformly between elevations shown on the Drawings or as otherwise provided by the Engineer.

12. Install piping so that the barrel of the piping and not the joints receives the bearing pressure from the trench bottom, or other bedding condition.

13. No piping shall be brought into position until the preceding length, valve, fitting, or special has been bedded and secured in place.

14. Whenever pipe laying is not actively in progress, the open ends of the piping shall be closed by a temporary plug or cap to prevent soil, water and other foreign matter from entering the piping.

15. Where required for inserting valves, fittings, specials, and closures, shall be made with a machine specially designed for cutting piping and in accordance with the manufacturer's instructions for field cutting of pipe. Make cuts carefully, without damage to piping, so as to leave a smooth end at right angles to the axis of the piping. Taper cut ends and file off sharp edges until smooth. Flame cutting will not be permitted. Replace and repair damaged piping.

16. Blocking under piping will not be permitted unless specifically approved by Engineer for special conditions.

17. Touch up protective and linings and coatings prior to installation.

18. Rotate piping to place outlets in proper position.

B. Bedding and Backfilling:

1. Bedded and installed piping in conformance with Section 02222 "Trenching, Backfilling, and Compaction," and as shown, except as otherwise specified.

2. No piping shall be laid until Engineer approves the bedding condition.

3. Excavation in excess of that required as shown on the Drawings or specified, which is not authorized by the Engineer, shall be at the Contractor's expense. Backfilling and compaction of the overexcavated areas shall be at the Contractor's expense.

4. Carefully and thoroughly compact all pipe bedding and fill up to the pipe centerline with hand-held pneumatic compactors.

C. Work Affecting Existing Piping:

1. Location of Existing Piping:

a. Locations of existing piping shown shall be considered approximate.

b. Determine exact location of existing piping to make connections, relocate, replace or which may be disturbed during earth moving operations, or which may be affected by work in any way.

c. Coordinate all excavations with utility companies, Owner and Engineer.

2. Taking Existing Pipelines Out of Service:

a. Do not take pipelines out of service unless specifically approved by Engineer.
b. Notify Engineer at least 48 hours prior to taking any pipeline out of service.

END OF SECTION 02610

SECTION 02612 POLYVINYL CHLORIDE PIPE

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section includes the installation of polyvinyl chloride piping systems.

B. All piping, fittings, and appurtenances shall be new, clean and in accordance with material specifications. In no instance will second-hand or damaged materials be acceptable.

1.2 REFERENCES

A. American Water Works Association (AWWA).

B. American Society of Testing and Materials (ASTM).

C. National Sanitation Foundation (NSF).

1.3 QUALITY ASSURANCE

A. Product Markings: Plainly and permanently mark each pipe length with the following information:

1. Nominal pipe size.

2. Plastic pipe material designation.

3. Standard thermoplastic pipe dimension ratio.

4. Pressure rating.

5. ASTM designation.

6. Manufacturers name or trademark and date of manufacture.

7. Potable water pipe marking or seal, if applicable.

B. Submit certification that the pipe is suitable for potable water. Conform to NSF Standard 14 for testing requirements.

1.4 SUBMITTALS

A. Product Data:

1. Submit manufacturer's catalog cuts, specifications and installation instructions.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Delivery and Storage:

1. Deliver and store pipe, fittings, specials, appurtenances and accessories and within the work limits as shown on the Drawings.

2. Exercise special care during delivery and storage to avoid damage to the products.

3. Store products in locations where unnecessary handling is avoided and where they will not interfere with the Owner's operations, construction operations or public travel.

B. Handling:

1. Handle pipe, fittings, specials appurtenances and accessories carefully with approved handling devices in strict conformance with the manufacturer's recommendations.

2. Do not drop or roll products off trucks, or otherwise drag, roll or skid products.

C. Products cracked, gouged, chipped, dented or otherwise damaged will not be approved and are to be removed and replaced at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Pipe and Fittings:

1. Pressure Pipe for Water Distribution: 4 inch through 12 inch conforming to AWWA C900. DR Series made from Class 12454-A or Class 12454-B virgin compounds in accordance with ASTM D1784.

2. Pressure Rated Sewer Pipe: 4 inch through 15 inch conform to ASTM D-2241 made from Class 12454-B virgin compounds in accordance with ASTM D1784, SDR 26.

3. Gravity Sewer: 4 inch through 15 inches conforming to ASTM D-3034 Type PSM. SDR 35.

4. Gravity Sewer: 18 inches through 27 inches conforming to ASTM F-679, wall thickness T-1.

B. Joints:

1. Join pipe joints, including fittings, shall be joined with an integral bell and spigot type rubber gasketed joint.

2. Conform to ASTM F-477 for gaskets and mark to indicate nominal pipe size and proper insertion direction.

PART 3 - EXECUTION

3.1 INSPECTION

A. Inspect all pipe and fittings prior to laying in the trench. Remove defective pipe and fittings from the site.

B. Do not backfill until inspection by the Engineer, unless otherwise approved by the Engineer.

3.2 INSTALLATION

A. Conform to Section "Trenching, Backfilling, and Compaction."

B. Conform to Section "Buried Pipe Installation."

3.3 TESTING

A. Conform to Section "Buried Pipe Installation."

END OF SECTION 02612

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contractor shall provide all labor, materials, equipment and services necessary for, and incidental to, the installation of polyethylene piping systems as shown on the Drawings and as specified herein.

B. All piping, fittings, and appurtenances shall be new, clean and in accordance with material specifications. In no instance shall second- hand or damaged materials be acceptable.

1.2 QUALITY ASSURANCE

A. Reference Standards:

1. The latest edition of the following standards, as referenced herein, shall be applicable.

a. "Standard Specifications, Construction and Materials, New York State Department of Transportation, Office of Engineering."

b. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)."

c. American Society of Testing and Materials (ASTM).

1.3 SUBMITTALS

A. Product Data:

1. Submit manufacturer's catalog cuts, specifications and installation instructions, for both pipe and coupling system.

2. Submit manufacturer's certification that product was manufactured, tested, and supplied in accordance with the standards specified herein.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Delivery and Storage:

1. Pipe, fittings, specials, appurtenances and accessories shall be delivered to and stored within the Contractor's work limits as shown on the Drawings.

2. Special care shall be exercised during delivery and storage to avoid damage to the products.

3. Products shall be stored within the contract limit lines so as to avoid unnecessary handling and in locations where they will not interfere with the Owner's operations or public travel.

B. Handling:

1. Pipe, fittings, special appurtenances and accessories shall be handled carefully with approved handling devices in strict conformance with the manufacturer's recommendations.

2. Products shall not be dropped or rolled off trucks, nor shall products be otherwise dragged, rolled or skidded.

C. Products cracked, gouged, chipped, dented or otherwise damaged will not be approved and shall be removed and replaced at the Contractor's expense, unless the product can be repaired in a manner acceptable to the manufacturer and Engineer. All repairs shall be at the Contractor's expense.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Storm Pipe:

1. Pipe shall be high-density polyethylene pipe (HDPE), smooth interior, and shall conform to the requirements of AASHTO M-294. HDPE shall be N-12 IB WT (watertight) pipe with integral bell and spigot joints as manufactured by Advance Drainage Systems, Inc., or equal.

2. Pipe and fittings shall be made of polyethylene compounds which conform to the physical requirements of Type III, Category 3, 4 or 5, P23, P33, or P34, Class C per ASTM D-1248 with the applicable requirements defined in ASTM D-1248. Clean reworked material may be used.

3. All HDPE pipe shall be as specified on the drawings.

B. Couplings:

1. All HDPE pipe shall have a bell and spigot "push-on" joints. Couplers will not be permitted.

PART 3 - EXECUTION

3.1 INSPECTION

A. Inspect all pipe and fittings prior to laying in the trench. Remove defective pipe and fittings from the site.

B. Do not backfill until inspection by the Engineer, unless otherwise approved by the Engineer.

3.2 INSTALLATION

A. Trenching, backfilling and compaction shall conform to Section 02222 – "Trenching, Backfilling, and Compaction."

B. Pipe installation shall conform to Section 02610 – "Buried Pipe Installation."

C. Hand trim excavations to required elevations. Correct over excavation with fill material of select granular fill.

D. Remove large stones or other hard matter which could damage material installation or impede consistent backfilling or compaction.

END OF SECTION 02614

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contractor shall provide all labor, materials, equipment, and supervision necessary for, and incidental to the abandonment of seven, two (2)-inch diameter monitoring wells.

1.2 WELL LOCATIONS

A. All existing monitoring wells to be abandoned have been identified on the Contract Drawings.

1.3 WELL INFORMATION

A. The following table summarizes the well data for each well to be abandoned:

Well ID	Well Diameter (inches)	Approximate Well Depth (feet)
CHA-1	2	19
CHA-2	2	14
CHA-3	2	13
CHA-4	2	13
CHA-5	2	14
CHA-6	2	14
MW-1	2	17
Total Depth All Wells		104

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Delivery and Storage:

1. Store products and materials at locations where unnecessary handling is avoided and where they will not interfere with the Owner's operations, construction operations or public travel.

2. Cover all grouting materials to protect the materials from hydration by precipitation.

1.5 QUALITY ASSURANCE

A. Registration:

1. All work shall be completed by a well drilling contractor registered in the State of New York, who shall comply with all applicable rules, regulations, and guidelines published by the State of New York regarding performance of the work.

B. Utilities for Construction:

1. Unless otherwise provided for, the Contractor shall furnish his own source of electricity, fuel, and potable water required to perform the work, and shall bear the costs of these services.

C. Protection of Property:

1. The Contractor shall properly protect all surface and subsurface structures and surrounding areas from damage which may result from the methods employed in performing the work. The Contractor shall be responsible for any damages to such structures resulting from his operations. Damaged property shall be repaired or replaced to a condition which is equal to that which existed prior to damage. The Engineer and the Client shall have the right to approve these restoration measures.

2. The Contractor shall clear all underground utilities within the proposed work areas by calling Dig Safely New York, municipal authorities, and public utilities of record prior to commencing all work.

D. Health and Safety:

1. Prior to mobilization to the site, the drilling Contractor will be responsible for providing a copy of a project specific Health and Safety Plan (HASP) to the Engineer. A copy of the he HASP will be kept on file at Engineer's office for reference. The contractor will also be responsible for meeting the minimum requirements put forth by the Contract Documents. All on-site personnel must have completed the necessary 40-hour HAZWOPER training.

2. The Contractor shall comply with all applicable laws and regulations governing the furnishing and use of safeguards, safety devices, and protection of equipment. The Contractor shall take any necessary precautions to protect the life and health of employees and the public in performance of the work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Bentonite-Cement Grout:

1. Bentonite-cement grout shall consist of Type I Portland cement (refer to ASTM Standard C150), finely ground sodium-bentonite type clay, and potable water. The mixture shall consist of one 94 pound bag of Type 1 Portland cement, 20 pounds of sodium-bentonite clay, and not more than nine (9) gallons of potable water.

B. Bentonite Seal:

1. A one-foot thick bentonite seal consisting of 1/4-inch diameter sodium-bentonite chips hydrated with potable water shall be placed at the top of the bentonite-cement grout column. The seal shall be no less than three (3) inches below the existing site grade.

PART 3 - EXECUTION

3.1 WELL ABANDONEMENT

A. General Requirements:

1. All abandoned wells must be fully sealed in a manner appropriate for site specific geologic conditions to prevent contaminant migration through the borehole.

2. The Contractor shall maintain a complete and accurate record of the well abandonment operation. The information to be recorded shall include the type of plugging material used, the volume of materials used, and the method of placing the plugging material into each well. All records shall be submitted to the Engineer within five business days after the well abandonment is complete.

3. All work shall be completed under the direction of the Engineer's on-site representative.

4. The Contractor shall make all provisions necessary for collecting any water encountered in performing the work and manage the water in accordance with the Soil and Water Management Plan included at the end of Section 02200 "Earthwork".

B. Removal of Well Materials:

1. The concrete surface seals and steel flush-mount protective casings around each monitoring well shall be removed and disposed of off-site properly in accordance with all local, State, and Federal regulations.

2. The PVC well riser shall be removed to the greatest extent possible by unthreading the PVC joints, cutting the riser pipe, or lifting the riser pipe upward using a cable hoist system or similar tool. The riser pipe shall be removed to a depth of no less than three feet below the final ground surface elevation. If the well riser is removed by a lifting force, the riser and well screen shall be filled with the bentonite-cement grout mixture prior to the removal of the casing so that the plugging material is in contact with the formation materials as the well is being pulled. The entire depth of the well will be required to be over-drilled and grouted should the borehole collapse prior to the placement of the grout.

3. All PVC well riser and screen shall be disposed of off-site properly in accordance with all local, State, and Federal regulations.

C. Plugging Procedures:

1. The bentonite-cement grout mixture shall be placed in the well by pumping the mixture down a tremie pipe of a least one-inch inside diameter which has been placed to the bottom of the well to avoid segregation or dilution of the sealing materials. The slurry shall be applied in one continuous operation until the well is filled to within at least three feet of the ground surface elevation. The tremie pipe shall be submerged in the grout during grout placement. Equipment used for pumping the grout shall be of the diaphragm, piston, gear, or helical type. The Contractor shall be responsible for determining the amount of grout required to plug each well.

2. The contractor shall allow the grout mixture to settle a minimum of two hours prior to placing the bentonite seal or backfill soils on the grout. Additional grout, if necessary, should be added to the well borehole to raise the grout level to within at least one foot of the ground surface elevation.

3. A one-foot thick bentonite seal consisting of 1/4-inch diameter sodium-bentonite chips hydrated with potable water shall be placed at the top of the bentonite-cement grout to provide a secondary seal.

D. Decontamination:

1. All down-hole equipment will be thoroughly decontaminated on-site prior to abandoning each well with a high-pressure steam cleaner. All rinse waster shall be collected and managed in accordance with the Soil and Water Management Plan appended to All rinse water shall be collected and managed in accordance with the Section 02221 "Site Management Plan".

E. Site Restoration:

1. The Contractor shall restore the site to a condition that reasonably approaches the original condition of the property prior to the start of work. After all well boreholes are sealed, the work area shall be graded to conform to the existing ground contours.

2. Upon completion of the work, the Contractor shall remove from the premises, all materials, debris, tools, and machinery used to complete the work. Plugging materials, grease, or other materials, which have accumulated on the work site premises shall be removed. The contractor shall dispose of all excess materials, the well protective casings, and PVC well pipe off-site in accordance with all local, State, and Federal regulations.

END OF SECTION 02672

SECTION 02721 DRAINAGE STRUCTURES

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contractor shall provide all labor, materials, equipment and services necessary for, and incidental to, the installation of drainage structures, covers, frames, grates, steps, and piping connections as shown on the Drawings and as specified herein.

B. All items shall conform in shape, size, dimensions and materials to the details shown on the Drawings or as directed by the Engineer.

1.2 QUALITY ASSURANCE

A. Reference Standards: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.

1. American Society of Testing and Materials (ASTM)
2. American National Standards Institute (ANSI)
3. Occupational Health and Safety Administration (OSHA)

1.3 SUBMITTALS

A. Shop Drawings: Submit the following for approval:

1. Design and construction details of all precast concrete units.
2. Fabrication, assembly and installation details for all castings and miscellaneous metal works.

B. Product Data:

1. Manufacturer's catalog cuts, specifications, and installation instructions.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the site to prevent interruption of the Work.

B. All materials shall be inspected by the Contractor upon delivery to the site. The Contractor shall notify the Engineer of any loss or damages. Replace loss or repair damage to new condition at the Contractor's expense.

C. Store materials to allow easy access for inspection and identification.

PART 2 - PRODUCTS

2.1 PRECAST CONCRETE DRAINAGE STRUCTURES

A. All precast concrete manhole units shall be as manufactured by Fort Miller Company, Inc., of Schuylerville, New York, or approved equal.

B. Precast manhole units shall conform to the dimensions shown on the Drawings and as detailed in Shop Drawings approved by the Engineer.

C. Unless otherwise specified, manhole sections shall conform to ASTM C478.

D. Precast manhole bases shall be of the "base unit" type, with an integral base and barrel section. The barrels shall be constructed in increments of one (1) foot to provide the indicated height with the fewest joints. Openings for pipe connections will not be permitted closer than one (1) foot to the nearest joint. Mark the date of manufacture and name or trademark of manufacturer in the inside of each section.

E. Manholes barrels, servicing pipes less than 27 inch diameter, shall be 48 inch diameter. Manholes barrels, servicing pipes 27 inch diameter and larger shall be 60 inch diameter. Larger diameter manholes barrels shall be provided as indicated on the Drawings or as specified herein.

F. Joints shall be rubber and concrete using O-ring gaskets (ASTM C443) or butyl rubber gaskets (ASTM C443), or tongue and groove buttered with 1:2 cement mortar (ASTM C270, Type M). All joints shall be sealed with cement mortar inside and out, and troweled smooth to the contour of the wall surface.

G. A precast eccentric cone, or precast slab where shown, shall be provided at the top of the manhole barrel to receive the frame and cover. The slab or cover shall be designed for an H-20 loading

H. A precast concrete slab, as necessary for proper frame and grate placement, shall be provided at the top of the catch basin unit. The slab shall be designed for an H-20 loading.

2.2 MANHOLE STEPS

A. Drainage structures shall contain manhole steps at twelve (12) inches on center as required by sidewall depth based upon OSHA requirements. The steps shall be embedded in the concrete and accurately positioned both vertically and horizontally.

B. Steps shall be capable of withstanding a 300-pound concentrated live load without permanent distortion, conforming to the requirements of ANSI A14.3, OSHA, and the details shown on the Drawings.

C. Manhole rungs shall be steel reinforced copolymer polypropylene plastic. Rungs shall be 14 in. wide, M.A. Industries type PS2-PF, or equal. Copolymer polypropylene shall be type II, grade 16906 meeting ASTM Specification D2146. Steel reinforcing shall be 3/8 in. diameter, grade 60 conforming to ASTM Specification A615 and shall be continuous throughout the rung. The portion of the legs to be embedded in the precast section shall have fins and be tapered to ensure a secure bond.

D. Steps shall be aluminum alloy 6061-T6 or 6065-T5, and surfaces in contact with concrete shall be coated with an approved bitumastic paint.

2.3 FRAMES AND COVERS

A. Frames and covers/grates shall be cast iron, ASTM A48, Class 30, free from flaws or unsightly defects.

B. Frames and covers/grates shall be designed for an H-20 loading, have a maximum cover weight of 150 pounds, and be machined to ensure correct fit and even bearing.

C. Grates shall be "bicycle safe" and have compatibility drainage characteristics with the frame and grate(s) shown on the Drawings.

D. Covers shall conform to the details on the Drawings and have "STORM SEWER" cast on every cover.

PART 3 - EXECUTION

3.1 EARTHWORK

A. Earthwork shall be in accordance with Section "Trenching, Backfilling, and Compaction."

3.2 INSTALLATION

A. Base units shall be placed on a minimum 12-inch foundation of pipe zone bedding material, and be set at the proper elevation, carefully leveled, and aligned.

B. Barrel units shall be set vertical with steps and sections in proper alignment. Joints shall be installed in accordance with manufacturer's recommendations.

C. Lifting holes shall be sealed tight with a tapered solid rubber plug driven into the hole and the remaining void filled with mortar on the outside only.

3.3 GRADE RINGS

A. Grade rings shall be used for all drainage structures to provide the potential for future adjustment.

B. Grade rings shall be placed in a combined thickness of at least 8 inches but not more than 20 inches, in order to bring the drainage structure frame to proper grade.

C. Consecutive grade ring layers shall be laid on an even mortar bed.

3.4 PIPE CONNECTIONS

A. Pipe connections to manholes shall be installed true to line and grade as shown on the Drawings. Wall fittings shall be watertight, compatible with the pipe joint. Connections shall conform to the details shown on the Drawings.

3.5 INVERT CHANNEL AND BENCH WALLS

A. An invert channel and bench walls shall be constructed as shown on the Drawings to provide a smooth transition in flow through the manhole. The invert channel and bench wall shall be constructed of 3,000 psi concrete. Benches shall be built-up to the height called for on the Drawings, or as directed by the Engineer, and given a steel trowel finish. Care shall be taken to slope all benches for proper drainage to the invert channel.

3.6 FRAMES

A. Frames shall be firmly set and bonded at the proper grade to conform with the finished grade shown on the Drawings.

B. Frames for manholes in unpaved areas shall be set at an elevation higher than finished grade as shown on the Drawings, or as directed by the Engineer.

3.7 WATERTIGHTNESS

A. All manholes shall be free of visible leakage. Each manhole shall be inspected, and all leaks shall be repaired in a manner approved by the Engineer.

END OF SECTION 02721

SECTION 02831 CHAIN LINK FENCE AND GATES

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to, the installation of chain link fence and gates, as shown on the Drawings and as specified herein.

1.2 QUALITY ASSURANCE

A. Comply with standards of the Chain Link Fence Manufacturer's Institute.

B. Provide steel fence and related gates as a complete system produced by a single manufacturer, including necessary erection accessories, fittings and fastenings.

C. Comply with ASTM A-120 for requirements of Schedule 40 piping.

D. Height of fence shall be measured from the top of concrete footing to the top of post.

1.3 SUBMITTALS

A. Shop Drawings: Show application to project, include gates.

B. Product Data: Manufacturer's catalog cuts, with printed specifications, and installation instructions.

PART 2 - PRODUCTS

2.1 STEEL FRAME WORK

A. End Posts, Corner Posts, Pull Posts and Line Posts:

1. Class B Steel Tubing: 2.875 inches OD, 4.64 lb. per linear ft; SS-40 Fence Pipe as manufactured by Allied Tube and Conduit Corp., Harvey IL., or equal.

2.2 STEEL FABRIC

A. One-piece widths for fence heights up to 12'-0".

B. Chain link, No. 9 gauge, 2 inch mesh.

C. Selvages: Top side twisted and barbed; bottom side knuckled.

2.3 SWING GATE POSTS

A. Pipe: 4 inches OD, 9.11 lb. per. linear ft. (Schedule 40).

2.4 SWING GATE FRAMES

A. Class B Steel Tubing: 1.90 inches OD, 2.28 lb. per linear ft; SS-40 Fence Pipe as manufactured by Allied Tube and Conduit Corp., Harvey, IL., or equal.

B. Assemble gate frames by welding or with special steel fittings and rivets for rigid connections, as shown on the Drawings or on Shop Drawings approved by the Engineer.

2.5 GATE HARDWARE

A. Hinges: Non-lift-off type, offset to permit 180 degree swing, and of suitable size and weight to support gate. Provide 1-1/2 pair of hinges for each leaf over 6 feet high.

B. Latch: Provide plunger bar type complete with flush plate set in concrete for all double gates and single gates over 10 feet. Padlock eye shall be an integral part of latch construction.

C. Keeper for Vehicle Gates: Provide keeper which automatically engages the gate leaf and holds it in open position until manually released.

D. Padlock: Provide a padlock to secure the gate. Keys shall be provided to the Engineer and Owner.

2.6 MISCELLANEOUS MATERIALS AND ACCESSORIES

A. Rails and Post Braces:

1. Class B Steel Tubing: 1.660 inches OD, 1.84 lb. per linear ft; SS-40 Fence Pipe as manufactured by Allied Tube and Conduit Corp., Harvey IL or equal.

B. Post Tops: Steel, wrought iron, or malleable iron.

C. Stretcher Bars: One piece equal to full height of fabric, minimum cross-section 3/16 inch x 3/4 inch.

D. Metal Bands (for stretcher bars): Steel, wrought iron, or malleable iron, to secure stretcher bars to end, corner, pull and gate posts.

E. Wire Ties:

1. For tying fabric to line posts, rails and braces: 9 gauge steel wire.
2. For tying fabric to tension wire: 11 gauge steel hog rings.

F. Truss Rods: 3/8 inch diameter.

G. Tension Wire: 7 gauge coiled spring steel wire.

H. Angle Beams, I Beams and Steel Shapes: ASTM A-36.

I. Bolts and Nuts: ASTM A-307, Grade A.

2.7 FINISHES

A. Steel Framework:

1. Pipe: Galvanized in accordance with ASTM A-120, 2.0 oz. zinc per sq. ft.

2. Class "B" Steel Tubing: Exterior; 1.0 oz zinc per sq. ft. plus a coating of chromate and polyurethane. Interior; zinc rich organic coating.

B. Fabric:

1. Aluminized Finish: ASTM A-491 aluminum coated with 0.40 oz per sq. ft.

C. Fence and Gate Hardware, Miscellaneous Materials, Accessories:

1. Wire Ties: Galvanized Finish, ASTM A-90 2.0 oz. zinc per sq. ft.

2. Hardware and Other Miscellaneous Items: Galvanized Finish, ASTM A-153 (Table 1).

3. Angle Beams, I Beams, and Steel Shapes: Galvanized in accordance with ASTM A-123, 2.0 oz zinc per sq. ft.

D. Barbed Wire and Tension Wire:

1. Aluminized Finish: ASTM A-585 Class 2, 0.30 oz. per sq. ft.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate fence and gate installation with completion of finished grading including topsoiling, and paving.

3.2 INSTALLATION

A. Space posts equidistant in the fence line with a maximum of 10 feet on center.

B. Earth: Excavate holes as indicated for fence and gate posts. Set posts in center of hole and fill hole with concrete. Plumb and align posts. Vibrate or tamp concrete for consolidation. Finish concrete in a dome shape above ground to shed water. Do not attach fabric to posts until concrete has cured a minimum of 7 days.

C. Locate corner posts at corners and at changes in direction. Use pull posts at all abrupt changes in grade and at intervals no greater than 500 feet. On runs over 500 feet, space pull posts evenly between corner or end posts. On long curves, space pull posts so that the strain of the fence will not bend the line posts.

D. Install top rail continuously through post caps or extension arms, bending to radius for curved runs. Install expansion couplings as recommended by fencing manufacturers.

E. Install intermediate rails in one piece between posts and flush with post on fabric side using special offset fittings where necessary.

F. Diagonally brace corner posts, pull posts, and terminal posts to adjacent line posts with truss rods and turnbuckles.

G. Attach fabric to security side of fence. Maintain a 2 inch clearance above finished grade except when indicated otherwise. Thread stretcher bars through fabric using one bar for each gate and end post and two for each corner and pull post. Pull fabric tight so that the maximum deflection of fabric is 2 inches when a 30 pound pull is exerted perpendicular to the center of a panel. Maintain tension by securing stretcher bars to posts with metal bands spaced 15 inches oc. Fasten fabric to steel framework with wire ties spaced 12 inches oc for line posts and 24 inches oc for rails and braces. Bend back wire ends to prevent injury. Tighten stretcher bar bands, wire ties, and other fasteners securely.

H. Position bolts for securing metal bands and hardware so nuts are located opposite the fabric side of fence. Tighten nuts and score excess threads.

1. Secure post tops, extension arms, and caps with one-way cadmium plated steel screws.

I. Install gates plumb and level and adjust for full opening without interference. Install ground-set items in concrete for anchorage, as recommended by fence manufacturer. Adjust hardware for smooth operation and lubricate where necessary.

J. Tension Wire: Support bottom edge of fabric with coil spring tension wire. Weave tension wire through fabric or fasten with hog rings spaced 24 inches oc. Tie tension wire to posts with 9 gauge wire ties.

END OF SECTION 02831

SECTION 02900 LIVE STAKES

PART 1 – GENERAL

1.1 WORK SPECIFIED

The Work covered under this Section of these Specifications includes all labor, equipment, live cut branches, and supplies needed for the planting of live stakes reaches designated in the drawings and as specified herein.

1.2 DEFINITIONS

A. Live stakes – Standard bioengineering techniques which involves planting of dormant plant cuttings which are of a species known to produce rooting from cuttings.

B. Dormant Season – The non-growing season for woody species, when they have set their buds, and photosynthesis in the leaves has stopped (top growth is no longer occurring).

C. Harvesting Site – Approved existing, natural, native growing sites that lie within a 40-mile radius of the project site, or approved cultivated sites.

1.3 SUBMITTALS

The Contractor shall submit to the Engineer, a harvesting and planting plan for review and approval. The plan shall include identification of the plant material source, the method of harvesting, storage and transportation plans, and installation methods. Harvesting and planting plans must address all requirements set forth in this specification.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Live stakes are woody plant cuttings, capable of rooting, that are taken from trees and shrubs. All plant materials must be top quality stock. Plant materials shall be true to species. They shall be sound, healthy specimens and first-class representatives of their species. Plant materials that have serious injuries, insect pests, diseases or are shriveled, will be rejected.

B. The following plant species are authorized for use in this project:

Scientific Name	**Common Name**
Salix cottetii	'Bankers' Dwarf Willow
Salix purpurea	Streamco Willow
Cornus amomum	Silky Dogwood
Cornus sericea stolnifera	Redosier Dogwood

C. Live stakes shall be cut from approved sources using a sharp tool. Live stakes shall be from 6 to 8 feet in length with a basal end of 2 to 3 inches in diameter. The top ends shall be blunt; butt ends shall be angled at 45 degrees. Live stakes shall be stripped of all stems and leaves, taking care to minimize scarring or bruising of the stakes. Immediately upon cutting, live stakes will be placed in water in a shaded area.

2.2 COLLECTION, DELIVERY, HANDLING, AND STORAGE

The Contractor shall provide for the proper collection, care, storage, and handling of plant materials before planting. During all stages, the plant materials shall be protected from exposure to wind and direct sunlight.

A. Collection:

1. Collect live stakes while dormant, between October 1 and February 28.

B. Delivery:

1. The Contractor shall notify the Engineer of the delivery schedule in advance so the plant materials may be inspected upon arrival at the site. The Engineer will inspect the cuttings for damage immediately upon receipt.

2. Unacceptable cuttings will be removed from the job site immediately and disposed of at an authorized site.

C. Handling:

1. Install live stakes within 8 hours of collection.

2. If planting does not occur with 8 hours, plant material must be properly stored according to the guidelines given in the following section (Part 2.2.D).

D. Storage:

1. All woody plantings collected more than 12 hours prior to installation, must be carefully bound, secured, and stored submerged in clean fresh water for a period of up to 2 weeks.

2. Outdoor temperatures must be less than 50 degrees F and temperature indoors and in storage containers must be between 34 and 50 degrees F.

3. If the live stakes can not be installed during the dormant season, cut during the dormant season and hold in cold storage at temperatures between 33 and 39 degrees F for up to 2 months.

PART 3 – EXECUTION

3.1 INSTALLATION

Live stakes shall be installed according to the harvesting and planting plan and in accordance with the plans, details and following specifications:

A. Live stakes shall be planted no later than May 31.

B. Live stakes shall penetrate through the riprap, bedding layer and geotextile fabric of the revetment with at least 2 feet of penetration into underlying soil.

C. Minimum 2 to 4 inches and two live buds of the live stake shall be exposed above the riprap.

D. Live stakes shall be spaced at 4 to 6 feet on center and above the mean high water line.

E. A dibble, iron bar, or similar tool shall be used to make a pilot hole to prevent damaging the material during installation. Temporary sleeving may also be utilized to penetrate through riprap. The Contractor shall submit proposed sleeving material and installation method in the harvesting and planting plan.

F. Live cuttings shall be inserted by hand into pilot holes, perpendicular to the riprap slope.

G. Live stakes shall be planted such that the stake is tamped, and has full contact between the soil and the cutting. Holes shall be backfilled with loose soil after the stake is installed. The Contractor shall use water, poured into each hole, to insure that the cutting is in firm contact with the backfill.

H. Care shall be taken not to damage the live stakes during installation. Those damaged at the top during installation shall be trimmed back to undamaged condition.

3.2 MAINTENANCE AND MONITORING

The Contractor shall maintain a one (1) year repair and replacement warranty for the live stakes. Plant survival rate of 80% must be achieved. If mortality rate exceeds 20%, the Contractor shall remove dead stakes and plant new live stakes in accordance with all requirements set forth in this specification.

END OF SECTION 02900

SECTION 02920 TOPSOIL

PART 1 - GENERAL

1.1 SUMMARY

A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to, the placement of topsoil in conformance with the lines, grades and thicknesses as shown on the Drawings and as herein specified.

B. Minimum thickness is six (6) inches, for all areas disturbed during construction and not receiving other surface treatment.

1.2 SUBMITTALS

A. Furnish earth materials to the testing laboratory for analysis. Submit reports for prequalification tests listed in Article "Source Quality Control" of this Section directly from independent testing agency to Engineer, with copy to Contractor.

B. Test reports for environmental testing shall be submitted to both the Contractor and the Engineer.

C. Submit manufacturer's or vender's certified analysis for soil amendments.

1.3 REFERENCES

A. Comply with the latest edition of the following standards:

1. "Standard Specifications, Construction and Materials, New York State Department of Transportation, Office of Engineering."

2. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)."

1.4 QUALITY ASSURANCE

A. Provide and pay for all costs in connection with an approved independent testing facility to determine conformance of soils and aggregate with the specifications.

1.5 PROJECT CONDITIONS

A. Coordinate the placement of topsoil with the completion of all underground utilities and infrastructure.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil: Fertile, friable, natural loam free of subsoil, clay lumps, brush, stones, or other deleterious materials larger than two (2) inches in greatest dimension, conforming to the requirements of NYSDOT Section 713-01 and meeting the following gradation requirements:

Sieve	Percent Passing
2"	100
1"	95 - 100
1/4"	70 - 100
No. 40	20-65
No. 200	10 – 50

1. pH range: 5.5 - 7.6
2. Organic Content: 2% - 20%
3. U.S.D.A Soil Texture: Sand loam, loam, clay loam, silt loam, or sandy clay loam.

B. The Contractor may amend soil with approved materials and by approved methods to meet the above specifications. Soil amendments shall meet the specifications listed below:

1. Limestone containing not less than 85% of total carbonates, ground so that not less than 90% passes a 10-mesh sieve and not less than 50% passes a 100-mesh sieve.

2. Aluminum Sulfate: Commercial grade.

3. Peat Humus: FS Q-P-166 and with texture and pH range suitable for intended use.

4. Bonemeal: Commercial, raw, finely ground; 4% nitrogen and 20% phosphoric acid.

5. Superphosphate: Soluble mixture of treated mixtures; 20% available phosphoric acid.

6. Sand: Clean, washed sand, free of toxic materials.

7. Perlite: Conforming to National Bureau of Standards PS 23.

8. Vermiculite: Horticultural grade, free of toxic substances.

9. Sawdust: Rotted sawdust, free of chips, stones, sticks, soil or toxic substances and with 7.5 lbs. nitrogen uniformly mixed into each cubic yard of sawdust.

10. Manure: Well rotted, unleached stable or cattle manure containing not more than 25% by volume of straw, sawdust or other bedding materials and containing no chemicals or ingredients harmful to plants.

11. Commercial Compost: Containing no chemical or ingredients harmful to plants.

2.2 SOURCE QUALITY CONTROL & MATERIAL ACCEPTANCE

A. Material proposed for use as topsoil must be stockpiled, sampled, and tested prior to use.

B. Topsoil containing foreign material may be rejected on the basis of visual examination by the Engineer, prior to testing.

C. Contractor shall employ the services of an independent testing agency in accordance with Section 01400 "Quality Requirements" to perform the following prequalification tests:

1. ASTM D 422: Method for Particle - Size Analysis of Soils.

   a. Number of Tests: One (1) per sample; Three (3) samples per borrow source.

2. ASTM D 4972: Test Methods for pH of Soils.

   a. Number of Tests: One (1) per sample; three (3) samples per borrow source.

3. ASTM D 2974: Test Methods for Moisture Ash, and Organic Matter of Peat and Other Organic Soils.

   a. Number of Tests: One (1) per sample; three (3) samples per borrow source.

D. Environmental Testing: The soil utilized for the soil cover system shall by certified and sampled at the frequency specified in Section 02200.3.1.

PART 3 - EXECUTION

3.1 PREPARATION

A. Place topsoil on compacted subgrade conforming to Section "Earthwork" or Section "Trenching, Backfilling, and Compaction" only after subgrades have been accepted by the Engineer.

B. Subgrades shall conform to the specified lines and grades.

C. Scarify the subgrade parallel to the contours to permit sufficient bonding with the topsoil. Do not scarify to the extent that the subgrade stability or density is disrupted.

3.2 TOPSOILING

A. Place topsoil in areas where seeding is to be performed. Place a minimum of six (6) inches of topsoil to the finished grade elevations as shown on the Drawings.

B. Mix approved soil amendments into six (6) inches of topsoil at specified rates. Ensuring thorough mixing throughout the entire (6) inch topsoil layer.

C. Fine grade topsoil to eliminate uneven areas and to ensure proper drainage. Maintain finished grade elevations required.

D. Remove all stones, roots, grass, weeds or other foreign matter while placing.

E. Lightly compact the topsoil to ensure its stability.

F. Topsoil in an unworkable condition due to excessive moisture, frost, or other conditions shall not be placed until it is suitable for placement.

3.3 FIELD QUALITY CONTROL

A. Contractor shall perform the following tests each time 1,000 cubic yards of topsoil is brought on site and placed.

1. ASTM D 422: Method for Particle - Size Analysis of Soils.

   a. Acceptance Criteria: Within specified limits.

2. ASTM D 4972: Test Methods for pH of Soils.

   a. Acceptance Criteria: Within specified limits.

3. ASTM D 2974: Test methods for Moisture, Ash, and organic content of peat and other organic soils.

   a. Acceptance Criteria: Within specified limits.

3.4 CLEANING

A. Remove all surplus subsoil and topsoil from project site.

B. Leave the site in clean, satisfactory condition ready to receive subsequent operations.

END OF SECTION 02920

PART 1 - GENERAL

1.1 SUMMARY

A. The Contractor shall provide all labor, materials, equipment and services necessary for, and incidental to, preparation of ground surfaces, fertilizing, seeding, mulching, and maintenance of seeded areas as shown on the Drawings or as specified herein.

B. Seed shall be sown from April 1st to June 1st or from September 1st to October 15th, unless otherwise approved by the Engineer.

1.2 SUBMITTALS

A. Quality Control Submittals:

1. Certification:

a. Submit manufacturer's or vendor's certified analysis for soil amendments and fertilizer materials.

b. Submit vendor's certified analysis for each grass seed mixture required, stating botanical and common name, percentages by weight, percentages by purity, germination, and weed seed.

2. Maintenance Instructions: Submit instructions recommending procedures to be established for maintenance of landscaped work for one (1) full year. Submit prior to expiration of Contractor's maintenance period.

3. Submit description of planned mulching techniques and corresponding manufacturer's installation recommendation for approval by the Engineer.

1.3 QUALITY ASSURANCE

A. All landscaping work shall be performed by one (1) Contractor, with proven experience in this field.

B. Package standard products with the manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.

C. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of materials with the specifications.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Fertilizer:

1. Commercial fertilizer (5-10-5) inorganic, or organic, containing not less than five (5) percent nitrogen, ten (10) percent available phosphoric acid, and five (5) percent water soluble potash.

2. If, as an alternative, the Contractor wishes to substitute for commercial fertilizer 5-10-5, another commercial fertilizer with a 1-2-1 ratio, such as 10-20-10 or 6-12-6, he may do so with the approval of the Engineer and the rate of fertilizer to be used shall be whatever amount is required to furnish the same amount of nitrogen as would be supplied by the 5-10-5.

B. Seed:

1. Seed shall be fresh, clean, new-crop seed mixed in the proportions specified for species and variety, conforming to Federal and State Standards.

2. Use the following standard mixture, unless a special mixture is otherwise indicated or approved by the Engineer:

Species	% By Weight	% By Purity	% Germination
Kentucky Bluegrass	40	85	80
Red Fescue	35	95	85
Perennial Rye	25	95	85

3. Weed seed content shall not exceed 0.25%.

C. Water: Clean, potable.

D. Mulch:

1. Provide and install mulch adequate to protect the seeding during its growing period. It shall be the responsibility of the Contractor to determine the appropriate mulching techniques for the particular site conditions and acquire approval of the same from the Engineer.

2. Clean straw for gentle slopes (less than 4 Horizontal:1 Vertical), consisting of stalks of oats, wheat, rye, or other approved crops which are free of noxious weed seeds. Weight shall be based on a fifteen (15) percent moisture content.

3. Mulching blanket for steep slopes (greater than or equal to than 4 Horizontal:1 Vertical) and drainage swales: "Curlex Blanket" by Amxco, "Ero-Mat" by Armco, or equal.

PART 3 - EXECUTION

3.1 PREPARATION

A. Water dry topsoil to depth of four (4) inches at least 48 hours prior to seeding to obtain a loose friable seed bed.

B. Mix fertilizer into top two (2) inches of topsoil at a rate of 20 lbs. per 1000 square feet.

3.2 SEEDING

A. Apply seed only when wind velocities are less than five (5) miles per hour.

B. Apply seed at 5 lbs. per 1000 square feet.

C. Sow half the seed with mechanical seeder.

D. Sow remaining half of seed at right angles to first seeding pattern, using the same method.

E. Cover seed to a depth of 1/8 inch by raking, harrowing or cultipacking.

F. Roll seeded area with roller weighing no more than 150 lbs. per foot of roller width.

G. Water seeded areas to a depth of four (4) inches.

3.3 MULCHING

A. Mulch slopes less than 4H:1V, place mulching blankets on slopes equal to or greater than 4H:1V.

B. Spread straw uniformly over seeded area with 75% ground coverage and at least 1-1/2 inches loose depth.

1. If, in the opinion of the Engineer, wind will disrupt the mulching, apply asphalt emulsion at a rate of 10 gallons per 1000 square feet.

3.4 HYDROSEEDING

A. Mix specified seed, fertilizer and pulverized mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.

B. Apply slurry uniformly to all areas to be seeded. Rate of application as required to obtain specified seed sowing rate.

3.5 PROTECTION

A. Immediately after seeding and sodding, erect barricades and warnings to protect seeded areas from traffic until grass is established.

B. Repair or replace damaged landscape work as directed by Engineer.

3.6 MAINTENANCE

A. Begin maintenance immediately after seed placement.

B. Watering:

1. Keep soil moist during seed germination period.

2. Supplement rainfall to produce a total depth penetration of 2 inches per day after germination.

C. Mowing:

1. When grass reaches 4 inches in height, mow to 2-1/2 inches in height.
2. Maintain grass between 1-1/2 inches and 2-1/2 inches in height.
3. Do not cut off more than 40% of grass leaf in a single mowing.\
4. Remove grass clippings.

D. Reseed and mulch spots larger than 1 square foot not having uniform coverage.

E. Maintain and protect all seeded areas until final acceptance of the Contract. Final acceptance of "Seeding" will not be made until an acceptable uniform stand of grass is obtained in all new lawn areas, except that the Engineer at his discretion may accept a portion or portions of the "Seeding" at various times. Upon acceptance by the Engineer of a seeded area, the Owner will immediately assume responsibility for maintenance and protection of that portion of the Contract Seeding.

END OF SECTION 02930

SECTION 02990 SURFACE RESTORATION AND REPAIR

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes provisions for the restoration and repair of all disturbed surfaces, as shown on the Drawings, and as specified herein.

B. In general, the Contractor shall be responsible for leaving the Work site in an equal or better condition than it exists prior to construction. This work shall include, but is not necessarily limited to, restoration and repair of the following items:

1. Lawns
2. Fencing
3. Retaining Walls
4. Monuments
5. Any others encountered and disturbed by construction.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lawns:

1. Lawns shall be restored in conformance with Sections "Topsoil" and "Seeding."

B. Miscellaneous Items:

1. Monuments, flagpoles, fencing, retaining walls, etc., shall be removed in such a manner so as to prevent damage, and be reset or reconstructed in their original locations unless otherwise directed by the Engineer. Damages incurred shall be corrected, or the item replaced, at the discretion of the Engineer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Remove all items designated to be reset or reused in a manner to prevent damage. Replace all damaged items with an equal material as approved by the Engineer, at the Contractor's expense.

B. All methods and materials are subject to the approval of the Engineer.

C. Restore or repair to their original condition, or as otherwise specified herein, all surfaces damaged or removed in the Work.

END OF SECTION 02990

PART 1 – GENERAL

1.1 WORK SPECIFIED

A. Work included: The Work covered under this Section of these Specifications consist of furnishing all plant, labor, supervision, equipment, appliances and materials and in performing all operations in connection with the installation of reinforced concrete for all aspects of the project, all in strict accordance with the Contract Documents.

1.2 SUBMITTALS

A. Shop Drawings and Product Data: Shop drawings and product data showing all fabricated dimensions and locations for placing of the reinforcing steel and accessories shall be submitted for review. Shop Drawings shall provide sufficient technical data to demonstrate compliance with the specified requirements. Products, materials, or information submitted for review shall not be used or fabricated until after receipt of the Engineer's review comments. Distribute only reviewed shop drawings to the job site.

B. Mix Design: Submit concrete mix design, with known test results, to the Engineer for review. The concrete mix design submittal shall consist of at least the following:

1. Type of cement.
2. Dry weight of cement.
3. Saturated surface-dry weights of fine and coarse aggregates.
4. Specific gravity of fine and coarse aggregates.
5. Quantities, type, name and producer of admixtures, as applicable.
6. Total weight of water, including the water that is absorbed by and on the surface of the aggregates.
7. Water to cement ratio.
8. Slump: Maximum slump, taken at the truck, will be determined based on the pump hose length. The mix designs shall include the anticipated loss of slump per 100-foot length of specified hose size.
9. Strength test data of the proposed mix design as specified herein.

Distribute reviewed mix design to testing laboratory, batch plant, and job site.

C. Submit concrete batch tickets for each truck delivered to site. Each ticket shall note at least the following data: design mix strength; batch proportions including actual water and aggregate moisture contents; date and batch time; arrival time at site; discharge time; concrete volume; and any change to concrete made at the site.

D. Construction Joints: Submit proposed construction and control joint details and locations for Engineer's review.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Quality Assurance:

1. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

2. The Owner, through the Engineer, reserves the right of approval of any Subcontractor pre-qualified and selected for this portion of the Work by the Contractor. Approval will be based, in part, on a documented successful experience in performing work of a similar nature.

3. Cast-In-Place Concrete work shall conform to all requirements of ACI 301, "Specifications for Structural Concrete for Buildings".

4. Detailing, fabrication, and erection of reinforcing steel shall conform to ACI 318, "Building Code Requirements for Structural Concrete and Commentary" and ACI 315, "Details and Detailing of Concrete Reinforcement".

5. Ready mix plant equipment and facilities shall conform to the "Check List for Certification of Ready Mixed Concrete Production Facilities" of the NRMCA.

B. Concrete:

1. Portland cement: Type II - low alkali conforming to ASTM C 150, "Standard Specification for Portland Cement".

2. Aggregate, general:

a. Shall be normal weight and uniformly graded and clean conforming to ASTM C33, "Standard Specification for Concrete Aggregates".

b. Do not use aggregate known to cause excessive shrinkage.

3. Aggregate, coarse: Crushed rock or washed gravel with a maximum size of 3/4".

4. Aggregate, fine: Natural washed sand of hard and durable particles varying from fine to particles passing a 3/8" screen, of which at least 12% shall pass a 50-mesh screen.

5. Water: Clean and potable.

6. Air entraining admixture shall conform to ASTM C260, "Standard Specification for Air Entraining Admixture for Concrete". The air entraining agent shall be a nontoxic concentrated solution of neutralized Vinsol resin, such as "Daravair" as manufactured by W.R. Grace Company or equivalent accepted by the Engineer.

7. Water reducing admixture shall conform to ASTM C494 "Standard Specification for Chemical Admixtures for Concrete." Water reducing agent shall be of Type A, B, C, D, E, F, or G (as noted in concrete mix design) such as "Daracem-100" or "WRDA-19" as manufactured by W.R. Grace Company or equivalent accepted by the Engineer.

B. Reinforcing Steel:

1. All reinforcing steel shall conform to ASTM 615 Grade 60, "Specification for Deformed and Plain Billet Steel Bars for Concrete Reinforcement", and shall be fusion bond epoxy coated as per ASTM A775.

2. Fabricate reinforcement to the required shapes and dimensions, within fabrication tolerances stated in the CRSI "Manual of Standard Practices."

3. Do not use reinforcement having any of the following defects:

   a. Bar lengths, depths, or bends exceeding the specified fabricating tolerances.
   b. Bends or kinks not indicated on the Drawings or required for this Work.
   c. Bars with cross section reduced due to excessive rust or other causes.

C. Moisture Protection: Curing materials for concrete cast above the tidal zone shall conform to ASTM C309, "Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete", wet burlap, or plastic membrane.

D. Accessories: All spacers, chairs, bolsters, and other devices necessary for proper reinforcing steel placement shall be epoxy coated with nylon tipped legs. All reinforcing steel shall be adequately tied with nylon, epoxy, or plastic coated tie wire and supported with epoxy-coated chairs that hold the bars to the specified clearance. One chair sample shall be submitted to the Engineer for review. No clay or concrete bricks or any other material other than reviewed chairs shall be permitted to support reinforcing steel.

E. Bonding Agent and Fusion Bonded Epoxy Coating Touch-Up: Bonding agent shall be Sika Armatec 110 Epocem, as manufactured by Sika Corporation or an equivalent accepted by the Engineer.

F. Product Delivery, Storage, and Handling: Conform to the recommendations of ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete".

PART 3 – EXECUTION

3.1 INSTALLATION

A. Concrete Mix Proportioning

1. Concrete shall be proportioned by the Contractor in accordance with ACI 301. The proposed design mix, together with all the Test Records, or Trial Mix Data, as required by ACI 301, shall be submitted to the Engineer for review at least two weeks prior to the first intended placement. Submit a separate pump mix if different from concrete mix placed by conventional methods.

2. Concrete shall be normal weight with a minimum compressive strength of 5000 psi at 28 days.

3. Concrete shall have a maximum water to cement ratio of 0.40.

4. Concrete shall be proportioned to have a slump of 4 inches, $\pm$ 1 inch, at the discharge end of the pump hose. Use a water reducing agent as required to achieve the desired slump range. Addition of water at site will not be permitted.

5. Concrete shall contain 4% to 6% entrained air.

B. Form Construction

1. Design, erect, support, brace, and maintain formwork so it will safely support vertical and lateral loads which might be applied until such loads can be supported safely by the concrete structure in accordance with ACI 347.

2. Construct forms to the exact sizes, shapes, lines, and dimensions shown, and as required to obtain accurate alignment, location, grades, and level and plumb work in the finished structure.

3. Form coating or water shall be applied to all forms. If coating is used, it shall be applied prior to placement of reinforcing steel.

4. Form ties and spreaders shall be of such type as to leave no metal closer than 3 inches from any exposed concrete surface.

C. Reinforcement Placement

1. All epoxy coated reinforcing steel shall be protected from damage to the epoxy during handling and placement. Any epoxy coated reinforcing steel, where the epoxy has been damaged shall be either removed from the site or re-coated, at the Engineer's discretion with strict conformance to the manufacturer's instructions at the Contractors expense.

2. Place reinforcement to obtain the required coverage for concrete protection. Minimum concrete cover for all reinforcing shall be 3 inches except where specifically noted otherwise.

3. Clean reinforcement and remove loose dust, earth, and other materials which reduce bond or destroy bond with concrete other than epoxy coating.

4. Position, support, and secure reinforcement against displacement by forms, construction, and the concrete placement operations.

5. All reinforcing steel shall be continuous unless specifically detailed otherwise on the Contract Drawings. Provide dowels or lap splices of the appropriate class to maintain continuity. Unless otherwise shown on the Contract Drawings lap bars 53 bar diameters minimum. Dowels or splices shall be shown on the shop drawings and shall be subject to the field review of the Engineer. No more than 60% of the total number of bars shall be spliced at one location.

D. Embedded Items

1. Install embedded items furnished under this Section and other Sections. All sleeves, inserts, anchors, and embedded items required for adjoining work or for its support shall be placed prior to casting concrete. All embedded items shall be positioned accurately and supported against displacement.

2. Where existing timber pile tops are to be embedded in the concrete, thoroughly clean the embedded portion of the piles of all debris and foreign matter prior to concrete placement. Do not damage the existing piles by cleaning.

E. Concrete Mixing

1. Transit-mix the concrete in accordance with provisions of ASTM C94.

2. Do not use concrete after 90 minutes from time of introduction of water to the mix.

F. Concrete Placement

1. All concrete work shall conform to the requirements of ACI 318, "Building Code Requirements for Structural Concrete".

2. Preparation:

   a. Remove foreign matter accumulated in the forms.

   b. Rigidly close openings left in the formwork.

   c. Wet wood forms immediately prior to concrete placement. Wet wood forms sufficiently to tighten up cracks. Wet other material sufficiently to maintain workability of the concrete.

   d. Use only clean tools.

3. Conveying:

   a. Perform concrete placing at such a rate that concrete which is being integrated with fresh concrete is still plastic.

   b. Deposit concrete as nearly as practicable in its final location so as to avoid separation due to re-handling and flowing.

   c. Do not use concrete which becomes non-plastic and unworkable, or does not meet required quality control limits, or has been contaminated by foreign materials.

   d. Remove rejected and excess concrete from the job site.

4. Placing concrete in forms:

   a. Concrete shall be cast to full dimensions in one operation.

   b. Free-fall of concrete during placement greater than eight feet is prohibited. The contractor shall place concrete with a tremie tube for drops greater than eight feet.

   c. Deposit concrete in horizontal layers not deeper than 24 inches, and avoid inclined construction joints.

   d. Remove temporary spreaders in forms when concrete has reached the elevation of the spreaders.

5. Consolidation

   a. Consolidate each layer of concrete immediately after placing, by use of internal concrete vibrators supplemented by hand spading, rodding, or tamping.

   b. Do not use vibrators to transport concrete inside the forms.

6. Construction Joints

a. Do not use horizontal construction joints.

b. Secure the Engineer's review of joint design and location prior to start of concrete placement.

G. Curing and Protection

1. Beginning immediately after placement, concrete shall be protected from premature drying, excessively hot or cold temperatures, and mechanical damage and shall be maintained with minimal moisture loss at a relative constant temperature for the period necessary for hydration of the cement and hardening of the concrete.

2. Concrete surfaces not covered by forms or within the inter-tidal elevations shall be protected from loss of surface moisture for not less than seven days using moisture protection as specified herein.

3. If cold-weather concreting is anticipated, a preconstruction meeting should be held to define how cold weather concreting methods will be used. When the mean daily ambient temperature is at or below 40 degrees F or 45 degrees F and falling the Contractor shall follow the requirements of ACI 306.1, "Standard Specification for Cold Weather Concreting":

a. Set up proper enclosure and heat to 50 degrees F for at least two (2) hours before starting any pour. Set up individual thermometers within enclosure to monitor ambient temperatures near the face of fresh concrete. Thermometers shall be placed at a maximum of 50-foot centers, at major corners or returns, and at ends of concrete sections. Monitor and record temperatures in a log at early morning, noon, and early evening.

b. Use a water-reducing admixture with an accelerated set, but do not use or rely upon any material as an anti-freeze. Use of calcium chloride is forbidden.

c. Use vented heaters with blowers so placed that they do not produce localized hot spots which may dry out the concrete. Exposure to exhaust gases from combustion heaters is prohibited for the first 24 hours of the curing period.

d. Maintain the temperature of the formwork at not less than 50 degrees F but not greater than 70 degrees F for 48 hours after completion of pour; formwork may be stripped after 72 hours after completion of pour. After 48 hours of maintaining at least 50 degrees F, the temperature may be allowed to drop gradually and shall be kept above 32 degrees F for a period of seven (7) days after completion of pour. Protection during this period may be provided by existing enclosure or by means indicated in note 5 below.

e. Protection may be provided by use of insulation methods. Adequate insulation shall consist of at least one of the following:

12" of dry earth; provide moisture cover if over slab concrete.
4" of hay under adequate moisture cover.
1" of insulation blankets with vapor barrier seal.
Other insulating material acceptable to the Engineer.

NOTE: Extreme conditions of temperature or wind may require more protection.

f. Concrete may not be placed on frozen ground.

g. All frozen concrete shall be removed from the job and replaced at no additional cost to the Owner.

4. When the mean daily ambient and substrate temperature is above 80 degrees F, the Contractor shall follow the requirements of ACI 305.1, "Standard Specification for Hot Weather Concreting". Concrete shall be protected from thermal damage. Provisions for windbreaks, shading, fog spraying, sprinkling, ponding, or wet covering with a light colored material shall be made in advance of placement and such protective measures shall be taken as quickly as concrete hardening and finishing operations will allow.

a. No concrete shall be placed when the air temperature is above 90 degrees F unless the air is still and relative humidity is above 80%.

b. Set up proper windbreakers for concrete surfaces whenever the relative humidity is less than 70% for slight air motion or 80% for light breezes.

c. Provide shade for pours otherwise exposed to the sun.

d. Concrete is to be at a temperature of 80 degrees F or less when placed. If necessary, the batching plant shall cool aggregates by spraying or by using chilled water or ice. All such water shall be accounted for as part of the mixing water.

e. Use an admixture with a retarded set.

f. All forms shall be thoroughly wetted at least daily and more often when the relative humidity is low.

g. For slabs, maintain the required materials for curing on hand, so they may be placed immediately upon finishing. All concrete placed in ambient temperatures over 80 degrees F shall be kept wet for a minimum of 24 hours. Intermittent spraying will not be permitted. No water shall be applied before concrete has acquired its initial set. When the concrete temperature of any slab goes above 100 degrees F, place a layer of sand on it and keep it continuously wet until the temperature is below 80 degrees F.

H. Finishing

1. Remove all fins, blemishes, and defective concrete areas and patch where required with reworked cement mortar of the same proportions as that used in the concrete.

2. Form tie holes shall be plugged solid with reworked cement mortar of the same proportions as that used in the concrete.

3. Exposed surfaces of concrete shall receive a wood float finish.

END SECTION 03300

SECTION 03400 PRECAST CONCRETE

PART 1 - GENERAL

1.1 DESCRIPTION

1. Work included: The Work covered under this Section of these Specifications consist of furnishing all plant, labor, supervision, equipment, appliances and materials and in performing all operations in connection with the installation of reinforced concrete for precast elements for all aspects of the project, all in strict accordance with the Contract Documents.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. The Owner, through the Engineer, reserves the right of approval of any Subcontractor pre-qualified and selected for this portion of the Work by the Contractor. Approval will be based, in part, on:

1. Documented successful experience in performing work of a similar nature.

C. All Cast-In-Place Concrete work shall conform to all requirements of ACI 301, "Specifications for Structural Concrete for Buildings".

D. Ready mix plant equipment and facilities shall conform to the "Check List for Certification of Ready Mixed Concrete Production Facilities" of the NRMCA.

1.3 SUBMITTALS

A. Shop Drawings and Product Data

Shop drawings and product data showing all fabricated dimensions and locations for placing of the reinforcing steel and accessories shall be submitted for review. Shop Drawings shall provide sufficient technical data to demonstrate compliance with the specified requirements. Products, materials, or information submitted for review shall not be used or fabricated until after receipt of the Engineer's review comments. Distribute only approved shop drawings to the job site.

B. Mix Design

Submit concrete mix design, with known test results, to the Engineer for review. The concrete mix design submittal shall consist of at least the following:

1. Type of cement.
2. Dry weight of cement.
3. Saturated surface-dry weights of fine and coarse aggregates.
4. Specific gravity of fine and coarse aggregates.
5. Quantities, type, name and producer of admixtures, as applicable.

6. Total weight of water, including the water that is absorbed by and on the surface of the aggregates.

7. Water to cement ratio.

8. Slump: Maximum slump, taken at the truck, will be determined based on the pump hose length. The mix designs shall include the anticipated loss of slump per 100-foot length of specified hose size.

9. Strength test data of the proposed mix design as specified herein.

Distribute approved mix design to testing laboratory, batch plant, and job site.

C. Submit concrete batch tickets for each truck delivered to site. Each ticket shall note at least the following data: design mix strength; batch proportions including actual water and aggregate moisture contents; date and batch time; arrival time at site; discharge time; concrete volume; and any change to concrete made at the site.

D. Construction Joints: Submit proposed construction and control joint details and locations for Engineer's review.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Conform to the recommendations of ACI 304, "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Concrete:

1. Portland cement: Type II - low alkali conforming to ASTM C 150, "Standard Specification for Portland Cement".

2. Aggregate, general:

a. Shall be normal weight and uniformly graded and clean conforming to ASTM C33, "Standard Specification for Concrete Aggregates".

b. Do not use aggregate known to cause excessive shrinkage.

3. Aggregate, coarse: Crushed rock or washed gravel with a maximum size of 3/4".

4. Aggregate, fine: Natural washed sand of hard and durable particles varying from fine to particles passing a 3/8" screen, of which at least 12% shall pass a 50-mesh screen.

5. Water: Clean and potable.

6. Air entraining admixture shall conform to ASTM C260, "Standard Specification for Air Entraining Admixture for Concrete". The air entraining agent shall be a non-toxic concentrated solution of neutralized Vinsol resin, such as "Daravair" as manufactured by W.R. Grace Company or equivalent accepted by the Engineer.

7. Water reducing admixture shall conform to ASTM C494 "Standard Specification for Chemical Admixtures for Concrete." Water reducing agent shall be of Type A, B, C, D, E, F, or G (as noted in concrete mix design) such as "Daracem-100" or "WRDA-19" as manufactured by W.R. Grace Company or equivalent accepted by the Engineer.

B. Moisture Protection:

Curing materials for concrete cast above the tidal zone shall conform to ASTM C309, "Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete", wet burlap, or plastic membrane.

C. Accessories:

All spacers, chairs, bolsters, and other devices necessary for proper reinforcing steel placement shall be epoxy coated with nylon tipped legs. All reinforcing steel shall be adequately tied with nylon, epoxy, or plastic coated tie wire and supported with epoxy coated chairs that hold the bars to the specified clearance. One chair sample shall be submitted to the Engineer for review. No clay or concrete bricks or any other material other than approved chairs shall be permitted to support reinforcing steel.

D. Bonding Agent and Fusion Bonded Epoxy Coating Touch-Up:

Bonding agent shall be Sika Armatec 110 Epocem, as manufactured by Sika Corporation or an equivalent accepted by the Engineer.

PART 3 - EXECUTION

3.1 CONCRETE MIX DESIGN PROPORTIONING

Concrete shall be proportioned by the Contractor in accordance with ACI 301, latest edition. The proposed design mix, together with all the Test Records, or Trial Mix Data, as required by ACI 301, shall be submitted to the Consulting Engineer for review at least two weeks prior to the first intended placement. Submit a separate pump mix if different from concrete mix placed by conventional methods.

A. Concrete at shall be normal weight with a minimum compressive strength of 6000 psi at 28 days.

B. Concrete shall have a maximum water to cement ratio of 0.45.

C. Concrete shall be proportioned to have a slump of 4 inches, $\pm$ 1 inch, at the discharge end of the pump hose. Use a water reducing agent as required to achieve desired slump range.

D. Concrete shall contain 4% to 6% entrained air.

3.2 FORM CONSTRUCTION

A. Design, erect, support, brace, and maintain formwork so it will safely support vertical and lateral loads which might be applied until such loads can be supported safely by the concrete structure in accordance with ACI 347.

B. Construct forms to the exact sizes, shapes, lines, and dimensions shown, and as required to obtain accurate alignment, location, grades, and level and plumb work in the finished structure.

C. Form coating or water shall be applied to all forms. If coating is used, it shall be applied prior to placement of reinforcing steel.

D. Form ties and spreaders shall be of such type as to leave no metal closer than 3 inches from any exposed concrete surface.

3.3 EMBEDDED ITEMS

A. Install embedded items furnished under this Section and other Sections. All sleeves, inserts, anchors, and embedded items required for adjoining work or for its support shall be placed prior to casting concrete. All embedded items shall be positioned accurately and supported against displacement.

B. Where precast prestressed concrete pile tops are to be embedded in the concrete, thoroughly expose the embedded steel reinforcement of the prestressed concrete piles providing a development length equal to 55 bar diameters or a standard 90 degree hook.

3.4 CONCRETE PLACEMENT

All concrete work shall conform to the requirements of ACI 318, "Building Code Requirements for Reinforced Concrete".

A. Preparation:

1. Remove foreign matter accumulated in the forms.

2. Rigidly close openings left in the formwork.

3. Wet wood forms immediately prior to concrete placement. Wet wood forms sufficiently to tighten up cracks. Wet other material sufficiently to maintain workability of the concrete.

4. Use only clean tools.

B. Conveying:

1. Perform concrete placing at such a rate that concrete which is being integrated with fresh concrete is still plastic.

2. Deposit concrete as nearly as practicable in its final location so as to avoid separation due to re-handling and flowing.

3. Do not use concrete which becomes non-plastic and unworkable, or does not meet required quality control limits, or has been contaminated by foreign materials.

4. Remove rejected and excess concrete from the job site.

C. Placing concrete in forms:

1. Concrete shall be cast to full dimensions in one operation.

2. Free fall of concrete during placement greater than eight feet is prohibited. The contractor shall place concrete with a tremie tube for drops greater than eight feet.

3. Deposit concrete in horizontal layers not deeper than 24 inches, and avoid inclined construction joints.

4. Remove temporary spreaders in forms when concrete has reached the elevation of the spreaders.

D. Consolidation

1. Consolidate each layer of concrete immediately after placing, by use of internal concrete vibrators supplemented by hand spading, rodding, or tamping.

2. Do not use vibrators to transport concrete inside the forms.

E. Construction Joints

1. Do not use horizontal construction joints.

2. Secure the Engineer's review of joint design and location prior to start of concrete placement.

3.5 CURING AND PROTECTION

A. Beginning immediately after placement, concrete shall be protected from premature drying, excessively hot or cold temperatures, and mechanical damage and shall be maintained with minimal moisture loss at a relative constant temperature for the period necessary for hydration of the cement and hardening of the concrete.

B. If cold-weather concreting is anticipated, a preconstruction meeting should be held to define how cold weather concreting methods will be used. When the mean daily ambient temperature is at or below 40 degrees F or 45 degrees F and falling the Contractor shall follow the requirements of ACI 306.1, "Standard Specification for Cold Weather Concreting":

1. Set up proper enclosure and heat to 50 degrees F for at least two (2) hours before starting any pour. Set up individual thermometers within enclosure to monitor ambient temperatures near the face of fresh concrete. Thermometers shall be placed at a maximum of 50-foot centers, at major corners or returns, and at ends of concrete sections. Monitor and record temperatures in a log at early morning, noon, and early evening.

2. Use a water-reducing admixture with an accelerated set, but do not use or rely upon any material as an anti-freeze. Use of calcium chloride is forbidden.

3. Use vented heaters with blowers so placed that they do not produce localized hot spots which may dry out the concrete. Exposure to exhaust gases from combustion heaters is prohibited for the first 24 hours of the curing period.

4. Maintain the temperature of the formwork at not less than 50 degrees F but not greater than 70 degrees F for 48 hours after completion of pour; formwork may be stripped after 72 hours after completion of pour. After 48 hours of maintaining at least 50 degrees F, the temperature may be allowed to drop gradually and shall be kept above 32 degrees F for a period of seven (7) days after completion of pour. Protection during this period may be provided by existing enclosure or by means indicated in note 5 below.

5. Protection may be provided by use of insulation methods. Adequate insulation shall consist of at least one of the following:

12" of dry earth; provide moisture cover if over slab concrete.
4" of hay under adequate moisture cover.
1" of insulation blankets with vapor barrier seal.
Other insulating material acceptable to the Engineer.

NOTE: Extreme conditions of temperature or wind may require more protection.

6. All frozen concrete shall be removed from the job and replaced at a cost to the Contractor.

C. When the mean daily ambient and substrate temperature is above 80 degrees F. the Contractor shall follow the requirements of ACI 305.1, "Standard Specification for Hot Weather Concreting". Concrete shall be protected from thermal damage. Provisions for windbreaks, shading, fog spraying, sprinkling, water ponds, or wet covering with a light colored material shall be made in advance of placement and such protective measures shall be taken as quickly as concrete hardening and finishing operations will allow.

1. No concrete shall be placed when the air temperature is above 90 degrees F unless the air is still and relative humidity is above 80%.

2. Set up proper windbreakers for concrete surfaces whenever the relative humidity is less than 70% for slight air motion or 80% for light breezes.

3. Provide shade for pours otherwise exposed to the sun.

4. Concrete is to be at a temperature of 80 degrees F or less when placed. If necessary, the batching plant shall cool aggregates by spraying or by using chilled water or ice. All such water shall be accounted for as part of the mixing water.

5. Use an admixture with a retarded set.

6. All forms shall be thoroughly wetted at least daily and more often when the relative humidity is low.

7. For slabs, maintain the required materials for curing on hand, so they may be placed immediately upon finishing. All concrete placed in ambient temperatures over 80 degrees F shall be kept wet for a minimum of 24 hours. Intermittent spraying will not be permitted. No water shall be applied before concrete has acquired its initial set. When the concrete temperature of any slab goes above 100 degrees F, place a layer of sand on it and keep it continuously wet until the temperature is below 80 degrees F.

3.6 FINISHING

A. Remove all fins, blemishes, and defective concrete areas and patch where required with reworked cement mortar of the same proportions as that used in the concrete.

B. Form tie holes shall be plugged solid with reworked cement mortar of the same proportions as that used in the concrete.

C. Exposed surfaces of concrete shall receive a wood float finish.

3.7 CONCRETE TESTING

Concrete testing shall comply with ACI-318. Test reports shall be submitted to the Engineer for review.

END SECTION 03400

SECTION 05110 WATERFRONT STRUCTURAL STEEL

PART 1 – GENERAL

1.1 WORK SPECIFIED

Work included: Provide miscellaneous structural steel items including but not limited to accessories as shown on the Drawings, specified herein, and needed for a complete and proper installation.

1.2 SUBMITTALS

A. Sufficient technical data to demonstrate compliance with the specified requirements.

B. Complete shop drawings detailing all members, profiles, sizes, spacing, proposed cuts, connections, camber, holes, openings, fasteners, and similar data. Erection plans showing the location and field connection of all members. Identify members by piece numbers which correspond to erection numbers. Structural steel connection details not specifically shown in the Contract Documents shall be detailed by the Contractor and included with shop drawing submittals.

C. Submit manufacturer's certifications showing that the products meet or exceed the required standards for the following items:

1. Bolts, including nuts and washers.
2. Threaded rods including all hardware.
3. Filler material and flux for welding.
4. Expansion bolts.

D. Submit Certified Mill Test Reports indicating structural strength, destructive and non-destructive test analysis, chemical and physical properties of each type of steel and conformance with ASTM A6.

E. Submit welder's certificates certifying welders employed on the Work, verifying AWS qualifications within the previous twelve months.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Quality Assurance

1. Use adequate number of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this section.

2. Perform welding with electric arc process and in accordance with AWS "Code for Arc and Gas Welding in Building Construction".

3. In addition to complying with pertinent codes and regulations, comply with:

a. AISC "LRFD Specification for Structural Steel Buildings", December 27, 1999.
b. AISC "Manual of Steel Construction – Load and Resistance Factor Design".

B. Structural Steel Shapes shall conform to ASTM A572 Grade 50 ksi yield.

C. Steel Angles, Channels and Plates shall conform to ASTM A36, 36 ksi yield.

D. Anchor rods shall conform to ASTM F1554, for 36, 55 and 105 ksi yield strength.

E. Carriage bolts and Lag screws shall conform to ASTM A307, Grade A.

F. High Strength Structural Bolts: Shall conform to ASTM A325 with hexagonal heads.

G. Nuts: Shall be hexagonal and conform to ASTM A563.

H. Washers (except against timber): Shall conform to ASTM F436.

I. Threadbar Rods and Nuts: DYWIDAG Threadbar or equivalent accepted by the Engineer, shall conform to ASTM A615, Grade 60.

J. Adhesive Anchors: Adhesive shall be HIT HY150 Injection Adhesive Anchor as manufactured by Hilti Corporation, or equivalent acceptable to the Engineer. Anchor rods shall be as specified above for threadbar anchors.

K. Expansion bolts: Shall be galvanized Trubolt, as manufactured by ITW Ramset/Redhead or equivalent accepted by the Engineer.

L. Welding Materials: AWS D1.1; Type E70XX or type required for materials being welded.

M. Grout: Non-shrink, non-metallic, high performance cement based grout conforming to ASTM C827 such as Sikagrout 212 as manufactured by Sika Corporation or equivalent accepted by the Engineer.

N. Fabrication:

1. Fabricate items of structural steel in accordance with AISC specifications and as shown on the accepted shop drawings.

2. Properly mark materials for field assembly and for identification of the structure and location intended. Fabricate for delivery sequence which will expedite erection and minimize field handling of Materials.

3. Provide bolts, nuts, and washers of all types and sizes required for completion of field erection.

4. Comply with AWS code for procedures, appearance, and quality of welds, and methods used in correcting welded work.

5. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates. No holes will be allowed unless first shown on the Shop Drawings and accepted by the Engineer.

6. Should holes be required in addition to those provided under this Section, provide all such holes and strengthen the area as required to compensate but only as accepted by the Engineer.

7. Moment connections shall develop the full strength of joined members. The cold weather welding requirements of AWS shall be required and enforced.

8. Where finishing is required, complete the assembly, including welding of units, before start of finishing.

9. Provide finish surfaces of members exposed in the final structure free from markings, burrs, and other defects.

10. Assemble and weld built-up sections by methods which will produce true alignment of axes without warp.

O. Protective Coating

1. General: Unless specifically noted otherwise, all items scheduled to receive protective coating shall be fully fabricated with holes, cuts, threads, etc. prior to receiving protective coating, prior to delivery to site.

2. Steel Sections: Unless specifically noted otherwise, all steel sections shall be shop coated prior to delivery to site in accordance with Section 09905.

3. Bolts, Nuts, and Washers: All bolts, nuts, and washers shall be hot dipped galvanized in accordance with ASTM A153.

4. Threadbar Rods, and Nuts: Epoxy coated in accordance with ASTM A775.

5. Adhesive Anchor Rods: anchor rods, nuts, and washers shall be hot-dipped galvanized in accordance with ASTM A153.

6. Field Touch-Up of Epoxy-Coated Items: Shall be performed in accordance with Section 09905 of the Specifications.

7. Field Touch-Up of Hot-Dipped Galvanized Items: Touch-up shall be performed with Tnemec 90-97 Tneme-Zinc primer or equivalent accepted by the Engineer. Surface preparation and coating application shall be in strict accordance with manufacturers written instructions.

P. Other Material

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the review of the Engineer prior to final installation.

Q. Product Handling and Storage

1. Deliver materials to the job site properly marked to identify the location for which they are intended.

2. Use markings corresponding to markings shown on the reviewed shop drawings.

3. Store in a manner to maintain identification and prevent damage, off the ground, using pallets or other supports, and to permit easy access for inspection.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Surface Conditions

Examine the areas and verify the conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

B. Erection

1. Surveys:

a. Establish benchmarks necessary for accurate erection of structural steel.

b. Check elevations of concrete surfaces, and locations of anchor bolts and similar items, before erection proceeds.

2. Temporary shoring and bracing:

a. Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads.

b. Provide temporary guy lines to achieve proper alignment of the structure as erection proceeds.

c. Remove temporary connections and members when permanent members are in place and final connections are made.

d. Field touch-up protective coating where damaged.

3. Anchor bolts:

a. Install anchor bolts and other connectors required for securing structural steel to adjacent work as shown on the Contract Drawings.

b. Provide templates and other devices as needed for presetting bolts and other anchors to accurate locations.

4. Field Assembly:

a. Set structural frames accurately to the lines and elevations indicated.

b. Align and adjust the members forming part of a complete frame or structure before fastening permanently.

c. Clean the bearing surfaces and other surfaces which will be in permanent contact before assembly.

d. Adjust as required to compensate for discrepancies in elevation and alignment.

e. Level and plumb individual members of the structure within specified AISC tolerances.

f. Establish required leveling and plumbing measurements on the mean operating temperature of the structure, making allowances for the difference between temperature at time of erection and the mean temperature at which the structure will be when completed and in service.

g. Comply with AISC specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to welds.

5. Gas cutting:

a. Do not use gas cutting torches for correcting fabricating errors in structural framing, except on secondary members where acceptable to the Engineer.

b. When gas cutting is permitted, finish the gas cut section to a sheared appearance acceptable to the Engineer.

6. Expansion Bolts and Adhesive Anchors: Install anchors in strict accordance with manufacturers written instructions.

7. Field Welding: Where field welds are scheduled, surfaces to be joined are to be properly prepared, including removal of any existing coatings prior to welding. Following welding, prepare and touch-up all areas requiring coating as set forth in Section 09905.

END SECTION 05110

SECTION 05500 METAL FABRICATIONS

PART 1 – GENERAL

1.1 WORK SPECIFIED

The Work covered under this Section of these Specifications consists of providing all plant, labor, supervision, equipment, appliances and materials, and in performing all operations in connection with the installation of metal fabrications (miscellaneous steel), all in strict accordance with the Contract Documents. The Work covered under this Section included, but is not necessarily limited to: rough hardware; pipe supports; railings and related connections; expanded metal mesh; grating; steel plate; steel diamond plate; pipe bollards; and fasteners. Provide accessories as shown in the Contract Documents specified herein, and needed for a complete and proper installation.

1.2 SUBMITTALS

A. The Contractor shall submit shop drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other Sections.

B. Product data for gratings; shop paint products; anchor bolt systems; and grout.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Quality Assurance

1. Use adequate number of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.

2. The Owner reserves the right of approval of any Subcontractor selected for this portion of the Work by the Contractor. Approval will be based, in part, on:

   a. Documented successful experience in performing work of a similar nature.

   b. Acceptable schedule of unit prices for measurement and payment in event of changes in the Work of this Section.

3. Fabricator Qualifications: Firm experienced in producing metal fabrications similar to those indicated for this Project with a record of successful in-service performance, and with sufficient production capacity to produce required units without delaying the Work.

4. Perform welding with electric arc process and in accordance with "Structural Welding Code-Steel" (ANSI/AWS D1.1). All structural welds shall be performed by American Welding Society (AWS) welders certified for the appropriate welding application.

5. Ready mix plant equipment and facilities shall conform to the "Check List for Certification of Ready Mixed Concrete Production Facilities" of the NRMCA.

a. AISC "Manual of Steel Construction – Load and Resistance Factor Design", Third Edition.

b. AISC "LRFD Specification for Structural Steel Buildings", December 27, 1999.

6. All connections shall be designed by the steel fabricator except those specifically detailed on the Contract Documents. Submit design calculations for review if requested by Owner.

7. All references to SSPC shall be interpreted as Steel Structures Painting Council Manual, Systems and Specifications

B. Ferrous Metals

1. Steel Plate, Diamond Plate, and Bar Stock: ASTM A 36.

2. Steel Pipe: ASTM A 53, standard weight (Schedule 40).

3. Welding Rods and Bare Electrodes: Select according to AWS specifications for the metal alloy to be welded.

C. Protective Coating

1. General: Unless specifically noted otherwise, all items scheduled to receive protective coating shall be fully fabricated with holes, cuts, threads, etc. prior to receiving protective coating, prior to delivery to site.

2. Steel Sections: Unless specifically noted otherwise, all steel sections shall be shop coated prior to delivery to site in accordance with Section 09905.

3. Bolts, Nuts, and Washers: All bolts, nuts, and washers shall be hot dipped galvanized in accordance with ASTM A153.

4. Field Touch-Up of Epoxy-Coated Items: Shall be performed in accordance with Section 09905 of the Specifications.

5. Field Touch-Up of Hot-Dipped Galvanized Items: Touch-up shall be performed with Tnemec 90-97 Tneme-Zinc primer or equivalent accepted by the Engineer. Surface preparation and coating application shall be in strict accordance with manufacturers written instructions.

D. General Fabrication

1. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each fabrication.

2. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.

3. Remove sharp or rough areas on exposed traffic surfaces.

4. Weld corners and seams continuously to comply with the following:

a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

b. Obtain fusion without undercut or overlap.

c. Remove welding flux immediately.

d. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.

5. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flathead (countersunk) screws or bolts. Locate joints where least conspicuous.

6. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

7. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

8. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

9. Fabricate joints that will be exposed to weather in a manner to prevent water entry, or provide weep holes where water may accumulate.

E. Rough Hardware

1. Furnish bent, or otherwise custom-fabricated, bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items are specified in Division 6 Sections.

2. Fabricate items to sizes, shapes, and dimensions required. Furnish malleable-iron washers for heads and nuts that bear on wood structural connections, and furnish steel washers elsewhere.

F. Miscellaneous Steel Trim

1. Unless otherwise indicated, fabricate units from structural steel shapes, plates, and bars of profiles shown with continuously welded joints, and smooth exposed edges. Miter corners and use concealed field splices wherever possible.

2. Provide cutouts, fittings, and anchorages as required to coordinate assembly and installation with other work. Provide anchors, welded to trim, for embedding in concrete or masonry construction, spaced not more than 6 inches from each end, 6 inches from corners, and 24 inches o.c., unless otherwise indicated.

3. Galvanize miscellaneous steel trim at all exterior locations and as indicated.

G. Steel Finishes

1. Rust-inhibitive, Alkyd Primer: Product to be per Section 2.02-A of this Specification. Apply 1 coat minimum 2.0-2.5 mils dry film thickness; color to be selected by Owner.

2. Galvanizing: For those items indicated for galvanizing, apply zinc coating by the hot-dip process complying with the following requirements:

   a. ASTM A153 for galvanizing iron and steel hardware.

   b. ASTM A123 for galvanizing both fabricated and un-fabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299 inch thick or thicker.

3. Epoxy Coating: Finish items per Section 09905- Protective Coating where noted in Contract Documents.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Field Measurements

Check actual locations of walls and other construction to which metal fabrications must fit by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabricating products without field measurements. Coordinate construction to ensure that actual dimensions correspond to guaranteed dimensions. Allow for trimming and fitting.

B. Preparation

1. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installing anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

2. Set sleeves in concrete with tops flush with finish surface elevations. Protect sleeves from water and concrete entries.

C. General Installation

1. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction. Include threaded fasteners for concrete inserts, toggle bolts, through-bolts, and other connectors as required.

2. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

3. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.

4. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop-welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units that have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.

5. Field Welding shall comply with the following requirements:

   a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

   b. Obtain fusion without undercut or overlap.

   c. Remove welding flux immediately.

   d. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.

D. Field Touch-Up of Finishes

1. Touch-up of Galvanizing: Thoroughly clean galvanized steel by SSPC-SP 3 Power Tool Cleaning method at all damaged, scratched and field-welded galvanized surfaces. Apply a zinc-rich primer such as Catha-Coat 304V by ICI Devoe Coatings. Touch-up repair shall conform to ASTM A780 and shall overlap a minimum of 2" with hot-dip galvanized surfaces. Allow to dry to a minimum dry film thickness of 2.0-4.0 mils.

2. Touch-up of Epoxy Coating: Thoroughly clean all field-welded, damaged, scratched, and chipped coating areas per SSPC-SP 2 Hand Tool Cleaning. Remove all rust and weld slag. Field touch-up areas shall be coated with epoxy coating with material specified in Section 09905-Protective Coating. Overlap touch-up 2" minimum with existing coating.

END SECTION 05500

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contractor shall furnish all plant, labor, materials, tools and equipment, and be responsible for the performance of all operations and incidentals necessary for the coating, handling, storing and shipping of plant coated steel sheet piling, structural steel, and miscellaneous ancillary items.

1.2 RELATED WORK SPECIFIED UNDER OTHER SECTIONS

A. Documents affecting work of this Section include, but are not necessarily limited to the following:

1. Section 02375 – Steel Sheet Piles
2. Section 05110 – Waterfront Structural Steel

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. The Owner, through the Engineer, reserves the right of approval of any Subcontractor pre-qualified and selected for this portion of the Work by the Contractor. Approval will be based, in part, on:

1. Documented successful experience in performing work of a similar nature.

2. Acceptable schedule of unit prices for measurement and payment in event of changes in the Work of this Section.

C. Coating materials shall be handled, stored, and applied in accordance with the manufacturer's specifications, or as directed by an authorized representative of the coating manufacturer.

D. All references to SSPC shall be interpreted as Steel Structures Painting Council.

E. Structural steel fabrications shall be received by coating applicator free of all oil and grease.

1.4 SUBMITTALS

A. Submit material certification data for the coating system to the Engineer for review no later than the time of delivery of materials to the site. Certification shall include a statement by the coating applicator that the protective coating was installed in strict accordance with manufacturers written instructions, including all surface preparation.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery:

1. The coating on all sheeting shall be inspected by Contractor upon delivery. Contractor shall notify Engineer of any damage. Products with significant scratches, gouges, deterioration, or otherwise damaged will not be approved and shall be returned and replaced at no expense to the Owner.

B. Storage:

1. All material shall be stored in strict accordance with the manufacturer's recommendations.

2. The Contractor guarantees that material shall be stored in a safe manner within Owner-designated area provided at the site.

C. Handling:

1. All material shall be handled in strict accordance with the manufacturer's recommendations and as approved by the Engineer.

PART 2 - PRODUCTS

2.1 EPOXY COATING MATERIAL

A. Material used for factory epoxy coating of all scheduled surfaces shall be BAR-RUST 235 Multi-Purpose Epoxy Coating as manufactured by Devoe Coatings or equivalent accepted by the Engineer.

B. Epoxy coating field touch-up material shall be identical to factory coating specified in paragraph 2.1-A above.

C. The topcoat color for all surfaces is to be black.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Surfaces shall be prepared in strict accordance with the protective coating system manufacturers written instructions. Surfaces are to be abrasion-blasted to a near-white surface cleanliness in accordance with SSPC-SP-10. Blast profile on steel shall be 1.5 to 2.5 mils in depth and be of a sharp, jagged nature as opposed to a "peen" pattern (from shot blasting). Surfaces must be sound, dry, clean, free of oil, grease, dirt, mildew, form release agents, curing compounds, loose and flaking paint, grit dust, and other foreign substances. Roto blasted surfaces are not acceptable.

B. Surfaces requiring field touch-up shall be prepared as described in paragraph 3.1-A above.

3.2 PROTECTIVE COATING APPLICATION

A. The protective coating shall be installed in strict accordance with manufacturers written instructions. Coating is to be applied in two coats to achieve a minimum overall dry film thickness of 15 mils.

B. All holidays or other imperfections in the coating shall be removed or repaired at the Contractors expense prior to final acceptance of the Work.

C. Surfaces requiring field touch-up of any required areas shall be prepared as described in paragraph 3.1-A above or by the following procedure:

1. Clean all surfaces to be repaired per SSPC-SP1 Solvent Clean to remove chlorides and general surface contamination.

2. Grind all welded areas to provide a smooth surface with no sharp edges.

3. Feather existing coatings back to sound material.

4. Clean all other surfaces to be repaired per SSPC-SP2 (Hand Tool Clean) or SSPC-SP3 (Power Tool Clean). Do not grind surfaces smooth; maintain adequate surface profile from original blast cleaning.

5. Stripe coat all welds and edges with the epoxy coating prior to painting to insure adequate film thickness.

END OF SECTION 02240

SECTION 09910 - WATERSTOP

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. The Work covered by this Section of these Specifications consists of furnishing all plant, labor, supervision, equipment, appliances and materials and in performing all operations related to installation of steel sheet pile waterstop, all in strict accordance with this Section of the Specifications and the applicable drawings and subject to the terms and conditions of the Contract.

1.2 RELATED WORK:

A. Documents affecting work of this Section include, but are not necessarily limited to Section 00710, Section 01640, Section 02375, other Sections in Division 1 of these Specifications, and all Schedules of the Contract.

1.3 QUALITY ASSURANCE

A. Use adequate number of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this section.

1.4 SUBMITTALS

A. Submit sufficient technical data to demonstrate compliance with the specified requirements.

1.5 PRODUCT HANDLING

A. Deliver materials to the job site properly marked to identify the location for which they are intended.

B. Store in a manner to maintain identification and prevent damage, off the ground, using pallets or other supports, and to permit easy access for inspection.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel Sheet Pile Interlock Waterstop: Waterstop shall be Adeka Ultra Seal A-50 waterstop for steel sheet pile interlocks manufactured by Asahi Danka Kogyo K.K. and distributed by Unique Techniques, Inc. West Coxsackie, NY 12192 (800-689-1722).

B. Penetration Waterstop: Waterstop for penetrations, including but not limited to penetrations for ground anchor system components (trumpets), shall be Adeka Ultra Seal P-201 sealant as manufactured by Asahi Danka Kogyo K.K. and distributed by Unique Techniques, Inc. West Coxsackie, NY 12192 (800-689-1722).

C. The Contractor shall furnish and install all required equipment and materials, temporary and permanent, including backing materials for sealing gaps, in accordance with manufacturer's requirements. The cost for this Work shall be included in the Contract Sum.

PART 3 - EXECUTION

3.1 INSTALLATION OF WATERSTOP

A. Steel Sheet Pile Interlock Waterstop

1. Interlock waterstop shall be installed in strict accordance with manufacturer's recommendations. Interlocks shall be cleaned of all debris and other deleterious materials.

2. Apply material in strict accordance with manufacturer's recommendation and within ambient and substrate temperature tolerances.

3. Allow for and provide proper curing conditions in strict accordance with manufacturer's recommendations.

4. Interlock waterstop shall be installed for the full length of the installed steel sheet pile.

B. Penetration Waterstop

1. Clean penetration of all debris and other deleterious material.

2. Apply material in strict accordance with manufacturer's recommendation and within ambient and substrate temperature tolerances.

3. Protect and allow for and provide proper curing conditions in strict accordance with manufacturer's recommendations.

4. Penetration waterstop shall be installed for the full length (circumference) of the penetration. Penetration waterstop shall be installed along the landward face of the steel sheet pile.

END OF SECTION 09910