

**Town of Essex
Essex County, NY
Water Treatment Plant Upgrade Project**

Contract Nos:

General TE-2020-G

Electrical TE-2020-E



Bidding Set

Town of Essex

Supervisor: Kenneth Hughes

Town Board Members:

Christopher DePinto

Erin Hall

Ronald Jackson

Claire LaPine

Town Clerk:

Alicia Kelly

Water Department:

Tina Gardner

Highway Department Superintendent:

Bradley French

CEDARWOOD
ENGINEERING SERVICES PLLC

8-12 DIETZ STREET, SUITE 302, ONEONTA, NY (P) 607.441.3246
3903 MAIN STREET, WARRENSBURG, NY (P) 518.623.5500



May 20, 2020

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NOTICE TO BIDDERS

NOTICE IS HEREBY GIVEN, that the Town of Essex, will accept sealed bids at the Town Hall until 2:00 P.M. on **July 8th, 2020** for a Water Treatment Plant Upgrades. A **mandatory** pre-bid conference will be held at 10 AM local time on **June 8th, 2020** at Essex Fire Department, 2659 Route 22, Essex, NY. Any bids received by respondents that are not in attendances at the pre-bid conference will be rejected. The bids shall be opened publicly and read aloud on **July 8th, 2020** at 2:00 P.M. at the Town Hall, located at 2313 Lakeshore Rd, Essex, NY 12936.

Specifications and standard proposals for the proposed work may be obtained on the New York State Contract Reporter account "Essex County Department of Community Development & Planning", and additionally on the County's website at: <https://www.co.essex.ny.us/bidders/publicbids.aspx>. For questions on the specifications and bidding, please contact the project engineer, Cedarwood Engineering Services, PLLC, by email at jsoukup@cedarwoodengineering.com or by telephone at (518) 623-5500.

Disadvantaged Business Enterprises (DBE's), Minority and Women Business Enterprises (M/WBE's), Service Disabled Veteran-Owned Businesses (SDVOB's) and Section 3 businesses are encouraged to respond. The project is currently being funded by a New York State Environmental Facilities Corporation ("EFC") Drinking Water State Revolving Fund ("DWSRF") and may include other funding sources to be determined moving forward. The project currently has a 20% combined Women/Minority Business Enterprise ("MWBE") goal for subcontracting opportunities. The project will be constructed under one general construction contract and one electrical construction contract and consists of work including, but not limited to: construction of a temporary water treatment plant in an existing building at the project site; partial demolition of the existing water treatment plant; construction of a new water treatment plant building addition; pump station, sanitary force main; water treatment plant including mechanicals; piping, controls; associated electrical work including a new generator and new electrical service.

TIME OF RESPONSE:

- | | |
|---------------------------------|--|
| • RFP/Bid Posted: | May 20th, 2020 |
| • Pre-Bid Conference: | June 8th 2020 at 10:00 am |
| • Bid Opening: | July 8th, 2020 by 2:00 pm. |
| • Notification of Award: | July 29th 2020 (Tentative) |
| • Contract Execution estimated: | August 29th, 2020 (Est.) |
| • Project Completion: | September 30th, 2021 |

All bids submitted in response to this notice shall be marked "SEALED BID – ESSEX WATER PLANT UPGRADES" clearly on the outside of the envelope with the bidder's name and address. Each bid must be prepared and submitted in accordance with the Instructions to Bidders and must be accompanied by Bid Security in the form of a certified check, bank check, or bid bond in the amount of **five percent (5%)** of the total amount of the bid. The successful bidder will be required to furnish a Performance Bond and a Payment Bond in the statutory form of public bonds required by Section 137 of the State Finance Law, each for one hundred percent (100%) of the amount of the Contract. The Municipality reserves the right to reject any or all bids, and advertise for new bids, if in its opinion the best interest of the Municipality will hereby be promoted.

The Town of Essex affirmatively states that in regard to any contract entered into pursuant to these instructions, without regard to race, color, sex, religion, age, national origin, disability, sexual preference or Vietnam Era veteran status, disadvantaged and minority or women-owned business enterprises will be afforded equal opportunity to submit bids in response hereto.

Owner: Town of Essex
2313 Main Street
Essex, New York 12936
Kenneth Hughes, Supervisor
Tel. 518-963-4287

Engineer: Cedarwood Engineering Services, PLLC
3903 Main Street
Warrensburg, NY 12885
Tel. 518-623-5500
Jonathan Soukup, PE – Project Manager
jsoukup@cedarwoodengineering.com

Dated: **May 20th, 2020**

INSTRUCTIONS TO BIDDERS

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ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Issuing Office* – The office from which the Bidding Documents are to be issued.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.

2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 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 authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within **[5]** days of Owner's request, Bidder shall submit (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information **as may be called for below (or in the Supplementary Instructions)**:

A. Evidence of Bidder's authority to do business in the state where the Project is located.

B. Bidder's state or other contractor license number, if applicable.

C. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

4.01 *Site and Other Areas*

A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or

storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

4.02 *Existing Site Conditions*

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify:
 - a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
 - b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
 - c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
 - d. Technical Data contained in such reports and drawings.
2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
4. **Geotechnical Baseline Report: The Bidding Documents do not contain a Geotechnical Baseline Report (GBR).**

B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

C. Adequacy of Data: 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 Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.

- B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.05 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 5 – BIDDER'S REPRESENTATIONS

5.01 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent

to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;

- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – PRE-BID CONFERENCE

- 6.01** A pre-Bid conference will be held at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer 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.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

- 7.01** All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than seven days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02** Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

- 8.01** A Bid must be accompanied by Bid security made payable to Owner in an amount of [5%] percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 8.02** The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.
- 8.03** The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 8.04** Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

- 9.01** The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

- 10.01** Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

- 11.01** The Contract for the Work, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those "or-equal" or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an "or-equal" or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids **in the case of a proposed substitute and 5 days prior in the case of a proposed "or-equal"**. Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner. **Substitutes and "or-equal" materials**

and equipment may be proposed by Contractor in accordance with Paragraphs 7.04 and 7.05 of the General Conditions after the Effective Date of the Contract.

- 11.02** All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.
- 11.03** **If an award is made, Contractor shall be allowed to submit proposed substitutes and “or-equals” in accordance with General Conditions.**

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01** **If required by the bid documents,** the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for those portions of the Work for which such identification is required.
- If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder’s Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.
- 12.02** 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, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.
- 12.03** **Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.**
- 12.04** **The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.06A.**

ARTICLE 13 – PREPARATION OF BID

- 13.01** The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
- B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”

- 13.02** A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.
- 13.03** A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 13.04** A Bid by an individual shall show the Bidder's name and official address.
- 13.05** A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 13.06** All names shall be printed in ink below the signatures.
- 13.07** The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.08** Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.09** The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 – BASIS OF BID

14.01 Unit Price *with Lump Sum Items and Alternates*

- A. Bidders shall submit a Bid on a unit price basis for each item **of which some of the items are on a lump sum basis** of Work listed in the unit price section of the Bid Forms **for the General Construction Contract (TE-2020-G), and Electrical Construction Contract (TE-2020-E), and include a separate price for each alternate described in the Bidding Documents and as provided for in the Bid Forms. The price for each alternate will be the amount added to or deleted from the base Bid if Owner selects the alternate.**
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions. **Bid Alternate Pricing is to be provided for use in the contract should alternate or additional work be required, and will not be used for Contract Bid Award.**
- C. 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.

ARTICLE 15 – SUBMITTAL OF BID

- 15.01** With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.
- 15.02** A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." **A mailed Bid shall be addressed to the Town of Essex, Town Hall located at 2313 Main Street, Essex, NY 12936 P.O. Box 355.**
- 15.03** Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

- 16.01** A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 16.02** If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03** If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 – OPENING OF BIDS

- 17.01** Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01** All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01** Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.
- 19.02** If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.
- 19.03** Evaluation of Bids
- A. In evaluating Bids, Owner will consider 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.
 - B. In comparison of Bids, the Contract Bid Award will be based on the sum of the Base-Bid items listed on the Bid Forms (i.e., the sum of the product of unit price multiplied by the quantity for each bid item), Not Bid Alternate Costs. Bid Alternates if any are provided for use in the Contract should alternate or additional work be required or requested by the Owner.**
- 19.04** In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 19.05** Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 20 – BONDS AND INSURANCE

- 20.01** Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 21 – SIGNING OF AGREEMENT

- 21.01** When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 22 – SALES AND USE TAXES

22.01 Owner is exempt from **[8.0%]** state sales and use taxes on materials and equipment to be incorporated in the Work. (Exemption No. **[Exemption certificate to be provide by Town after Notice of Award]**). Said taxes shall not be included in the Bid. Refer to Paragraph SC-7.09 of the Supplementary Conditions for additional information.

ARTICLE 23 – FEDERAL REQUIREMENTS

23.01 Federal requirements at Article 19 of the Supplementary Conditions apply to this Contract.

ARTICLE 24 – ATTACHMENTS TO THE BID

24.01 The following documents are submitted with and made a condition of this Bid in coordination with **ARTICLE 7 – ATTACHMENTS TO BID OF the Bid Form:**

- A. Required Bid security;
- B. List of Proposed Subcontractors;
- C. List of Proposed Suppliers;
- D. List of Project References;
- E. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;
- F. Contractor's License No.: [REDACTED] [or] Evidence of Bidder's ability to obtain a State Contractor's License and a covenant by Bidder to obtain said license within the time for acceptance of Bids;
- G. Required Bidder Qualification Statement with supporting data;
- H. Non-Collusion Certification;
- I. Corporate Resolution Certification;
- J. Iran Divestment Act Certification;
- K. Non-Segregated Facilities Certification;
- L. EEO Certification;
- M. Debarred Contractors Certification;
- N. Worker's Compensation Certification;
- O. NYS Anti-Harassment Form;
- P. MWBE Utilization Plan (NYS EFC DWSRF Loan – 20% Combined MWBE Goal, see Attachment "A" for detailed requirements);
- Q. NYS Wage Rates & Attachments.

ARTICLE 25 – LIST OF DRAWINGS

25.01 The following is the list of Contract Drawings, which are bound separately, and which, in conjunction with these specifications, comprise the Contract Documents.

Drawing Number	Drawing Name
C-0	COVER
C-1	EXISTING OVERALL SITE PLAN
C-2	EXISTING SITE PHOTOS & REFERENCE TABLE
C-3	EXISTING PLANT PROCESS SCHEMATIC
C-4	EXISTING PLANT PLAN
C-5	EXISTING PLANT SECTION VIEWS
C-6	PROPOSED PROCESS SCHEMATIC
C-7	PROPOSED OVERALL SITE PLAN
C-8	PROPOSED PLANT PLAN
C-9	PROPOSED PLANT SECTION VIEW
C-10	PROPOSED PUMP STATION PROFILE
C-11	PROPOSED PUMP STATION DETAILS
C-12	PROPOSED RAIN GARDEN
C-13	PROPOSED PLANTING/TREE SCREENING
C-14	TREE SCREENING VIEW 1
C-15	TREE SCREENING VIEW 2
C-16	EROSION & SEDIMENT CONTROLS
C-17	TEMPORARY TREATMENT
D-1	DEMOLITION PLAN
A-1	FOUNDATION PLAN
A-2	FLOOR PLAN & ELEVATIONS

Town of Essex, NY
Water Treatment Plant Upgrade
Contracts: TE-2020-G and TE-2020-E

A-3	NEW ROOF PLAN
A-4	SECTIONS AND DETAILS
A-5	SECTIONS AND DETAILS
A-6	SECTIONS AND DETAILS
A-7	DETAILS & RESTROOM LAYOUT
P-1	PLUMBING SANITARY/SUPPLY
E-1	ELECTRICAL LIGHTING/POWER
E-2	ONE LINE DIAGRAM/DETAILS
E-3	ONE LINE DIAGRAM/DETAILS

INFORMATION AVAILABLE TO BIDDERS

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

SUBSURFACE DATA

1. Subsurface data for the test site is included as Attachment 1.

RECORD PLANS

1. Record plans are included as Attachment 2.

Town of Essex, New York
Water Treatment Plant Upgrade
Contracts TE-2020-G and TE-2020-E

BID FORM

**Town of Essex
Essex County, New York
Water Treatment Plant Upgrade**

Contract Nos. TE-2020-G and TE-2020-E

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

***Ken Hughes, Supervisor
Town of Essex, NY
P.O. Box 355
2313 Main Street
Essex, New York 12936***

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum, Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder 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 Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will perform the Work in accordance with the Contract Documents for the following price(s) **(For all work, at the prices stated in the Contractor’s Bid, attached immediately following Article 9):**

A. **Notes:**

1. Separate bids will be received for the General Construction Contract (TE-2020-G) and Electrical Construction Contract (TE-2020-E). Bidders are not required to bid on both contracts together, and bids will be evaluated separately for each contract.
2. Bidders shall be wholly responsible for filling out all line items including any listed alternates on the attached bid forms for each Contract (bid forms attached immediately following Article 9 of this Bid Form).

B. **General Construction Contract – TE-2020-G**

1. Sum of the lump sum and unit price items in the listed quantities at the specified unit of measure for the attached Base Bid sheet attached for the general construction contract – TE-2020-G.
 - a. Note: Contract bid award is based on the sum of the base-bid items listed on the sheet(s) attached (i.e.: the sum of the product of unit price multiplied by the quantity for each bid item), not bid alternate costs. Bid alternate pricing is to be provided for use in the contract should alternate or additional work be required.
 - b. Bidder acknowledges that (1) each bid unit price and lump sum includes an amount considered by the Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price bid items will be based on actual quantities, determined as provided in the Contract Documents.

Total of Lump Sum and Unit Price Bids = Total Bid Price \$_____
(For the General Construction Contract – TE-2020-G)

C. Electrical Construction Contract – TE-2020-E

1. Sum of the lump sum and unit price items in the listed quantities at the specified unit of measure for the attached Base Bid sheet attached for the electrical construction contract – TE-2020-E.
 - a. Note: Contract bid award is based on the sum of the base-bid items listed on the sheet(s) attached (i.e.: the sum of the product of unit price multiplied by the quantity for each bid item), not bid alternate costs. Bid alternate pricing is to be provided for use in the contract should alternate or additional work be required.
 - b. Bidder acknowledges that (1) each bid unit price and lump sum includes an amount considered by the Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price bid items will be based on actual quantities, determined as provided in the Contract Documents.

Total of Lump Sum and Unit Price Bids = Total Bid Price \$ _____
(For the Electrical Construction Contract – TE-2020-E)

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
 - A. Required Bid security;
 - B. List of Proposed Subcontractors;
 - C. List of Proposed Suppliers;
 - D. List of Project References;
 - E. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;

- F. Contractor's License No.: [REDACTED] **[or]** Evidence of Bidder's ability to obtain a State Contractor's License and a covenant by Bidder to obtain said license within the time for acceptance of Bids;
- G. Required Bidder Qualification Statement with supporting data;
- H. **Non-Collusion Certification;**
- I. **Corporate Resolution Certification;**
- J. **Iran Divestment Act Certification;**
- K. **Non-Segregated Facilities Certification;**
- L. **EEO Certification;**
- M. **Debarred Contractors Certification;**
- N. **Worker's Compensation Certification;**
- O. **NYS Anti-Harassment Form;**
- P. **NYS Environmental Facilities Corporation Construction Bid Package – "Attachment "A" of the Agreement included within the Project Manual**
 - 1. **EEO Policy Statement**
 - 2. **Documented Proof that EPA Form 6100-2 – DBE Subcontractor Participation Form was given to MWBE Subcontractors**
 - 3. **EPA Form 6100-3 – DBE Subcontractor Performance Form**
 - 4. **EPA Form 6100-4 – DBE Subcontractor Utilization Form**
 - 5. **Lobbying Certification**
 - 6. **AIS Contractor's Certification**
- Q. **NYS Wage Rates & Attachments.**

ARTICLE 8 – DEFINED TERMS

- 8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:

[Signature]

[Printed name]

(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:

[Signature]

[Printed name]

Title:

Submittal Date:

Address for giving notices:

Telephone Number:

Fax Number:

Contact Name and e-mail address:

Bidder's License No.:

(where applicable)

BID FORM – GENERAL CONTRACT

CONTRACT TE-2020-G

Having familiarized themselves via review of the contract documents, the contractor/supplier agrees to provide all equipment, tools, labor (if applicable), services, rentals, materials and any other items necessary to complete the work items set forth in the contract documents.

The contractor shall hereby provide the following costs for each item. Contractor shall include in the bid, costs associated with extending manufacturer's warranties for no less than one year from the date of completion of Performance Testing (unless specified specifically in specifications section).

The Contractor shall include costs for services for equipment repairs and adjustments which may be required during operations/performance testing.

Table 1: General Contract Base Bid

Bid Item No.	Description	Cost Basis	Bid Price (in figures)
G-1	Mobilization, Demobilization, Bonds & Insurance	Lump Sum	\$
G-2	General Construction Work (Use total from General Contract Supplemental Breakdown Table 2 on subsequent sheets)	Lump Sum	\$
		Base Bid Total (In Figures)	\$

TOTAL BASE BID AMOUNT FOR ITEM Nos. G-1 THROUGH G-2:

TYPE BASE BID TOTAL AMOUNT (IN WORDS)

BID SUBMITTED BY:

TYPE COMPANY NAME

Table 2: General Contract Supplemental Breakdown

Work Item No.	Description	Units	Unit Price	# of Units	Total (in figures)
C1	Demolition	LS	N/A		\$
C2	New Building Construction	LS	N/A		\$
C3	New Treatment Plant Construction	LS	N/A		\$
C4	Chlorine Contact Time Piping, Fittings & Appurtenances	LS	N/A		\$
C5	New Sanitary Pump Station, Control Panel & Clean Water Test	LS	N/A		\$
C6	New Force Main & Air Release Valve Assembly	LS	N/A		\$
C7	Temporary Treatment Plant Construction	LS	N/A		\$
C8	Temporary Raw Water Pump Station Shelter	EA		1	\$
C9	Temporary Chemical Room/Laboratory Building	EA		1	\$
C10	Breakdown & Cleanup of Temporary Treatment and Buildings w/Relocation of Temp. Buildings to Town Highway Garage	LS	N/A		\$
C11	Equipment Start-Up/Performance Testing	LS	N/A		\$
C12	Pressure & Leakage Testing and Disinfection & Bacteriological Testing	LS	N/A		\$
C13	Erosion & Sediment Controls	LS	N/A		\$
C14	Site Restoration	LS	N/A		\$
Grand Total of Item G-2 (In Figures)					\$

Table 3: General Contract Bid Alternates

Work Item No.	Description	Units	Unit Price	# of Units	Total (in figures)
A1	Rain Garden (See drawing C-12)	LS	N/A		\$
A2	Tree & Shrub Plantings on Earthen Berm (See drawings C-13 to C-15)	LS	N/A		\$
Grand Total of Bid Alternates (In Figures)					\$

Bid Alternate Notes:

1. Bid alternates are not included for basis of award.
2. Bid alternates are provided for use in the contract should alternate or additional work be required.

BID FORM – ELECTRICAL CONTRACT

CONTRACT TE-2020-E

Having familiarized themselves via review of the contract documents, the contractor/supplier agrees to provide all equipment, tools, labor (if applicable), services, rentals, materials and any other items necessary to complete the work items set forth in the contract documents.

The contractor shall hereby provide the following costs for each item. Contractor shall include in the bid, costs associated with extending manufacturer's warranties for no less than one year from the date of completion of Performance Testing (unless specified specifically in specifications section).

The Contractor shall include costs for services for equipment repairs and adjustments which may be required during operations/performance testing.

Table 1: Electrical Contract Base Bid

Bid Item No.	Description	Cost Basis	Bid Price (in figures)
E-1	Mobilization, Demobilization, Bonds & Insurance	Lump Sum	\$
E-2	Temporary Electrical Work	Lump Sum	\$
E-3	Water Plant Electrical Installation	Lump Sum	\$
E-4	Existing Generator & ATS Removal, New Generator/Transfer Switch & Electrical System Installation	Lump Sum	\$
		Base Bid Total (In Figures)	\$

TOTAL BASE BID AMOUNT FOR ITEM Nos. E-1 THROUGH E-3:

TYPE BASE BID TOTAL AMOUNT (IN WORDS)

BID SUBMITTED BY:

TYPE COMPANY NAME

CERTIFICATION

Non-Collusive Certification required of all bidders under Section 103-d of the General Municipal Law as amended by Chapter 675 of the Laws of 1966, and further amended by Chapter 56 of the Laws of 2010, effective June 22, 2010.

- (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 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.
- (a-1) Notwithstanding the foregoing, the statement of non-collusion may be submitted electronically in accordance with the provisions of subdivision one of section one hundred three of the General Municipal Law.
- (b) A bid shall not be considered for award nor shall any award be made where (a) (1) (2) and (3) above have not been complied with; provided however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth, in detail, the reasons therefor. Where (a) (1) (2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.
- (c) The person signing this bid or proposal certifies that he has fully informed himself regarding the accuracy of the statements contained in this certification, and under the penalties of perjury, affirms the truth thereof, such penalties being applicable to the bidder as well as to the person signing on its behalf;
- (d) That attached hereto (if a corporate bidder) is a certified copy of resolution authorizing the execution of this certificate by the signatory of this bid, or proposal, on behalf of the corporate bidder.

Individual Bidder

Co-Partnership

By _____
Partner

Corporation

By _____
President

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the
_____,
Secretary of the Corporation named as Principal in the within bond; that
_____,
who signed the bond on behalf of the Principal was then
_____ of said
Corporation; that I know his signature, and his signature thereto is
genuine; and that said bond was duly signed, sealed, and attested to for
and in behalf of said corporation by authority of this governing body.

Corporate Seal

Title _____

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the County receive information that a Bidder/Contractor is in violation of the above-referenced certification, the County will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the County shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default.

The County reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says that he/she
is the _____ of the
_____ Corporation and that neither the
Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

SIGNED

SWORN to before me this

_____ day of _____

201____

Notary Public: _____

CERTIFICATION OF NONSEGREGATED FACILITIES

This Bidder certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The Bidder certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The Bidder agrees that a breach of his certification will be a violation of the Equal Opportunity clause in any Contract resulting from acceptance of this Bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clock, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are, in fact, segregated on the basis of race, color, religion, or national origin, because of habit, local custom or otherwise. The Bidder agrees that (except where he had obtained identical certification from proposed Subcontractors for specific time periods) he will obtain identical certifications from proposed Subcontractors prior to the award of Subcontracts exceeding \$10,000.00 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certifications in his files.

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. Paragraph 1001.

Date: _____

Company: _____

By: _____ Title: _____
(signature of representative)

Official Address:

**CERTIFICATION OF PRIME CONTRACTOR
REGARDING EQUAL EMPLOYMENT OPPORTUNITY**

NAME OF BIDDER _____ PROJECT NUMBER _____
INSTRUCTIONS
This certification is required pursuant to Executive Order 11246, Part II, Section 203 (b), (30 F.R. 12319-25). Each prospective contractor shall state in his bid proposal whether he has participated in any previous contract or subcontract subject to the Equal Opportunity Clause; and, if so, whether he has filed all compliance reports due under applicable filing requirements.

SUBCONTRACTOR'S CERTIFICATION

CONTRACTOR'S NAME: _____

ADDRESS: _____

Subcontractor has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.

YES _____ NO _____

2. Compliance reports were required to be filed in connection with such contract or subcontract.

YES _____ NO _____

IF YES, state what reports were filed and with what agency.

3. Subcontractor has filed all compliance reports due under applicable instructions, including SF-100.

YES _____ NO _____

4. If answer to item 3 is "NO", please explain in detail on reverse side of this certification.

CERTIFICATION - THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF. A WILLFULLY FALSE STATEMENT IS PUNISHABLE BY LAW. (U.S. CODE, TITLE 18, SECTION 1001.)

NAME AND TITLE OF SIGNER (PLEASE TYPE)

(SIGNATURE)

(DATE)

**CONTRACTORS CERTIFICATION
FROM DEBARRED CONTRACTORS LIST**

TO BE COMPLETED BY CONTRACTOR AND ATTACHED TO BID PROPOSAL FORM:

Company Name

(Company Representative; print name) hereby

certifies that the above listed company is not included on the Consolidated List of debarred, suspended and ineligible contractors and grantees for this purpose and the Comptroller General's Consolidated List of persons or firms currently debarred for violations of various public contracts incorporating labor standards provisions.

(Company Representative; sign name)

(Date signed)

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

**CERTIFICATION Of Anti-Harassment Policy and
Mandatory Annual Sexual Harassment Training**

This Bidder certifies that its company has developed and maintains an Anti-Harassment and Mandatory Annual Sexual Harassment Training as per the legislation signed on April 12, 2018, by New York Governor Andrew Cuomo. The law budget legislation that includes significant anti-sexual harassment measures that (1) require mandatory sexual harassment training and written anti-harassment policies; (2) expand sexual harassment protections to non-employees; (3) prohibit certain non-disclosure provisions in settlement agreements; (4) prohibit mandatory arbitration of sexual harassment claims; and (5) require bidders on state contracts to certify compliance with policy and training requirements. Beginning October 9, 2018, employers will be required to distribute a written anti-harassment policy and provide annual sexual harassment training to all employees. The New York State Department of Labor and New York State Division of Human Rights will develop a training program and a model sexual harassment policy for employers to use. An employer may develop its own policy and training program as long as they meet all of the requirements of the new law. Policies must include a complaint form for use by employees. Training must include an explanation of sexual harassment; examples of prohibited harassment; supervisor responsibilities; state and federal anti-harassment laws, including the remedies provided by each; an explanation of employees' rights and the forums in which complaints can be made.

Every employer in the State of New York is required to adopt a sexual harassment prevention policy pursuant to Section 201-g of the Labor Law. An employer that does not adopt the model policy must ensure that the policy that they adopt meets or exceeds the minimum standards.

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. Paragraph 1001.

Date: _____

Company: _____

By: _____ Title: _____
(signature of representative)

Official Address:

Town of Essex, NY
Water Treatment Plant Upgrade
Contracts: TE-2020-G and TE-2020-E

FORM OF RECEIPT OF ADDENDA

Addendum	Signature	Date Rec'd
----------	-----------	------------

1	_____	_____
---	-------	-------

2	_____	_____
---	-------	-------

3	_____	_____
---	-------	-------

4	_____	_____
---	-------	-------

Company Name: _____

Address: _____

Company Representative: _____
(print name and title)

Signature: _____

Date: _____

BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum _____ \$ _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

SURETY

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____ By: _____
Signature Signature (Attach Power of Attorney)

Print Name Print Name

Title Title

Attest: _____ Attest: _____
Signature Signature

Title Title

Note: Addresses are to be used for giving any required notice.

Provide execution by any additional parties, such as joint venturers, if necessary.

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. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver 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.
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, 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 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 total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action shall be commenced 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 the 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. Notices 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 delivery, 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 from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with 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.

QUALIFICATIONS STATEMENT

**THE INFORMATION SUPPLIED IN THIS DOCUMENT IS CONFIDENTIAL TO THE EXTENT
PERMITTED BY LAWS AND REGULATIONS**

1. SUBMITTED BY:

Official Name of Firm:

Address:

2. SUBMITTED TO:

3. SUBMITTED FOR:

Owner:

Project Name:

TYPE OF WORK:

4. CONTRACTOR'S CONTACT INFORMATION

Contact Person:

Title:

Phone:

Email:

5. AFFILIATED COMPANIES:

Name:

Address:

6. TYPE OF ORGANIZATION:

☐ SOLE PROPRIETORSHIP

Name of Owner:

Doing Business As:

Date of Organization:

☐ PARTNERSHIP

Date of Organization:

Type of Partnership:

Name of General Partner(s):

☐ CORPORATION

State of Organization:

Date of Organization:

Executive Officers:

- President:

- Vice President(s):

- Treasurer:

- Secretary:

☐ LIMITED LIABILITY COMPANY

State of Organization:

Date of Organization:

Members:

☐ JOINT VENTURE

Sate of Organization:

Date of Organization:

Form of Organization:

Joint Venture Managing Partner

- Name:

- Address:

Joint Venture Managing Partner

- Name:

- Address:

Joint Venture Managing Partner

- Name:

- Address:

7. LICENSING

Jurisdiction:

Type of License:

License Number:

Jurisdiction:

Type of License:

License Number:

8. CERTIFICATIONS

CERTIFIED BY:

Disadvantage Business Enterprise:

Minority Business Enterprise:

Woman Owned Enterprise:

Small Business Enterprise:

Other ():

9. BONDING INFORMATION

Bonding Company:

Address:

Bonding Agent:

Address:

Contact Name:

Phone: _____

Aggregate Bonding Capacity: _____

Available Bonding Capacity as of date of this submittal: _____

10. FINANCIAL INFORMATION

Financial Institution: _____

Address: _____

Account Manager: _____

Phone: _____

INCLUDE AS AN ATTACHMENT AN AUDITED BALANCE SHEET FOR EACH OF THE
LAST 3 YEARS

11. CONSTRUCTION EXPERIENCE:

Current Experience:

List on **Schedule A** all uncompleted projects currently under contract (If Joint Venture list each participant's projects separately).

Previous Experience:

List on **Schedule B** all projects completed within the last 5 Years (If Joint Venture list each participant's projects separately).

Has firm listed in Section 1 ever failed to complete a construction contract awarded to it?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a construction contract awarded to them in their name or when acting as a principal of another entity?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

12. SAFETY PROGRAM:

Name of Contractor's Safety Officer: _____

Include the following as attachments:

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) OSHA No. 500- Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all safety citations or violations under any state all received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide the following for the firm listed in Section V (and for each proposed Subcontractor furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) the following (attach additional sheets as necessary):

Workers' compensation Experience Modification Rate (EMR) for the last 5 years:

YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____

Total Recordable Frequency Rate (TRFR) for the last 5 years:

YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____

YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____

Total number of man-hours worked for the last 5 Years:

YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____

Provide Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) Days Away From Work, Days of Restricted Work Activity or Job Transfer (DART) incidence rate for the particular industry or type of Work to be performed by Contractor and each of Contractor's proposed Subcontractors and Suppliers) for the last 5 years:

YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____

13. EQUIPMENT:

MAJOR EQUIPMENT:

List on **Schedule C** all pieces of major equipment available for use on Owner's Project.

I HEREBY CERTIFY THAT THE INFORMATION SUBMITTED HERewith, INCLUDING ANY ATTACHMENTS, IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NAME OF ORGANIZATION: _____

BY: _____

TITLE: _____

DATED: _____

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS _____ DAY OF _____, 20____

NOTARY PUBLIC - STATE OF _____

MY COMMISSION EXPIRES: _____

REQUIRED ATTACHMENTS

1. Schedule A (Current Experience).
2. Schedule B (Previous Experience).
3. Schedule C (Major Equipment).
4. Audited balance sheet for each of the last 3 years for firm named in Section 1.
5. Evidence of authority for individuals listed in Section 7 to bind organization to an agreement.
6. Resumes of officers and key individuals (including Safety Officer) of firm named in Section 1.
7. Required safety program submittals listed in Section 13.
8. Additional items as pertinent.

SCHEDULE A

CURRENT EXPERIENCE

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE C - LIST OF MAJOR EQUIPMENT AVAILABLE

[illegible]

NOTICE OF AWARD

Date of Issuance:

Owner: Town of Essex Owner's Contract No.:
Engineer: Cedarwood Engineering Services Engineer's Project No.: 17-011
PLLC
Project: Water Treatment Plant Upgrade Contract Name:
Bidder:
Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated [] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

[describe Work, alternates, or sections of Work awarded]

The Contract Price of the awarded Contract is: \$ [] *[note if subject to unit prices, or cost-plus]*

[] unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically. *[revise if multiple copies accompany the Notice of Award]*

☐ a set of the Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner [] counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security *[e.g., performance and payment bonds]* and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any):

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner:

Authorized Signature

By:

Title:

Copy: Engineer

**AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between **The Town of Essex, New York** (“Owner”) and
____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Town of Essex, Essex County, NY

Water Treatment Plant Upgrade

Contract: TE-2020-G

Contract: TE-2020-E

ARTICLE 2 – THE PROJECT

The Project, of which the Work under the Contract Documents is a part, is generally described as follows:

The project will be constructed under one general construction contract and one electrical construction contract and consists of work including, but not limited to: construction of a temporary water treatment plant in an existing building at the project site; partial demolition of the existing water treatment plant; construction of a new water treatment plant building addition; pump station, sanitary force main; water treatment plant including mechanicals; piping, controls; associated electrical work including a new generator and new electrical service.

- 2.01 The Project has been designed by Cedarwood Engineering Services, PLLC.
- 2.02 The Owner has retained Cedarwood Engineering Services, PLLC (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 3 – CONTRACT TIMES

3.01 *Time of the Essence*

- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

3.02 *Contract Times: Days*

- A. The Work will be substantially completed on or before **September 30, 2021** for the Water Treatment Plant Upgrade, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **November 30, 2021**.

3.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
1. Substantial Completion: Contractor shall pay Owner \$ for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$ for each day that expires after such time until the Work is completed and ready for final payment.
 3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

ARTICLE 4 – CONTRACT PRICE

- 4.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:
- A. For all Unit and Lump Sum Priced Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item, or for Lump Sum amounts as listed on the attached bid forms):
- B. For all agreed upon Additive work at Lump Sum Price Work included in the contract:
1. **General Construction Contract: TE-2020-G**
 - a. Bid Forms to be attached following Contract Award.
 2. **Electrical Construction Contract: TE-2020-E**
 - a. Bid Forms to be attached following Contract Award.

The extended prices for Unit and Lump Sum Priced Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

- C. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment), including chosen alternatives (list chosen alternatives below) \$.

1. List of Chosen Alternatives:

- D. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 5 – PAYMENT PROCEDURES

5.01 Submittal and Processing of Payments

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

5.02 Progress Payments; Retainage

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 1st day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in 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 elsewhere in the Contract.
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 90 percent of Work completed (with the balance being retainage); and
 - b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion **of the entire construction to be provided under the Contract Documents**, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

5.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price and retainage as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 6 – INTEREST

- 6.01 All moneys not paid when due as provided in Article 15 of the General Conditions shall bear interest at the statutory rate of New York State.

ARTICLE 7 – CONTRACTOR’S REPRESENTATIONS

- 7.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
 - E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor’s safety precautions and programs.
 - F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
 - G. 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.
 - H. 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.
 - I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 8 – CONTRACT DOCUMENTS

8.01 *Contents*

- A. The Contract Documents consist of the following:
1. This Agreement (pages 1 to [] inclusive).
 2. Performance bond (pages [] to [] inclusive).
 3. Payment bond (pages [] to [] inclusive).
 4. Other bonds.
 - a. [] (pages [] to [] inclusive).
 5. General Conditions (pages [] to [] inclusive).
 6. Supplementary Conditions (pages [] to [] inclusive).
 7. Specifications as listed in the table of contents of the Project Manual.
 8. Drawings (not attached but incorporated by reference) consisting of [] sheets with each sheet bearing the following general title: [] [or] the Drawings listed on the attached sheet index.
 9. Addenda (numbers [] to [] inclusive).
 10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages [] to [] inclusive).
 11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 9 – MISCELLANEOUS

9.01 *Terms*

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

9.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

9.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

9.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

9.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

9.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor,

through a process such as highlighting or “track changes” (redline/strikeout), or in the Supplementary Conditions.

B. EFC GRANT PROGRAM REQUIREMENTS

- 1. THIS CONTRACT IS IN ACCORDANCE WITH THE NYS EFC PROGRAM REQUIREMENTS, AND IS INCLUDED AS ATTACHMENT “A”. THIS DOCUMENT SHALL BE INCLUDED IN ANY RESULTANT CONTRACTS.**

DRAFT

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

By: _____

Title: _____

Attest: _____

Title: _____

Address for giving notices:

By: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Title: _____

Address for giving notices:

License No.: _____
(where applicable)

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

ATTACHMENT A



**Environmental
Facilities Corporation**

ANDREW M. CUOMO
Governor

SABRINA M. TY
President and CEO

Program Requirements and Bid Packet for Construction Contracts

(For Treatment Works and Drinking Water projects funded with NYS Clean Water State Revolving Fund or Drinking Water State Revolving Fund)

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New York State Environmental Facilities Corporation
625 Broadway, Albany, NY 12207-2997
P: (518) 402-6924 F: (518) 402-7456
www.efc.ny.gov

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ATTACHMENTS (REQUIRED FORMS)

- Attachment 1 - EEO Policy Statement
- Attachment 2 - EEO Workforce Employment Utilization Report
- Attachment 3 - Monthly MWBE Contractor Compliance Report
- Attachment 4 - MWBE Utilization Plan
- Attachment 5 - MWBE Waiver Request
- Attachment 6 - EPA Form 6100-2 - DBE Subcontractor Participation Form
- Attachment 7 - EPA Form 6100-3 - DBE Subcontractor Performance Form
- Attachment 8 - EPA Form 6100-4 - DBE Subcontractor Utilization Form
- Attachment 9 - Lobbying Certification
- Attachment 10 - AIS Contractor's Certification
- Attachment 11 - AIS Manufacturer's Certification
- Attachment 12 - Federal Payroll Form (WH-347)

PART 1:

HOW TO USE THIS DOCUMENT

The New York State Environmental Facilities Corporation (“EFC”) implements the New York State Revolving Fund (“SRF”) for both Clean Water and Drinking Water projects.

This Program Requirements and Bid Packet for Construction Contracts document contains (1) a brief description of New York State and federal program requirements for Contracts and Subcontracts funded in whole or part by the New York State Clean Water and Drinking Water SRFs, (2) required language for such Contracts and Subcontracts to satisfy the SRF program requirements, including required forms, and (3) guidance materials to assist entities in complying with these requirements.

PROGRAM REQUIREMENTS

The following requirements apply to Treatment Works and Drinking Water projects funded with the NYS Clean Water State Revolving Fund or Drinking Water State Revolving Fund:

- Participation of Minority- and Women-Owned Business Enterprises (“MWBE”) and Equal Employment Opportunities (“EEO”) pursuant to New York State Executive Law, Article 15-A and New York Code of Rules and Regulations, Title 5 (5 NYCRR) Parts 140-145 (Regulations of the Commissioner of Economic Development);
- Participation by Disadvantaged Business Enterprises (“DBE”) in United States Environmental Protection Agency (“EPA”) Programs pursuant to 40 Code of Federal Regulations (CFR) Part 33;
- Equal Employment Opportunities pursuant to Titles VI and VII of the Civil Rights Act of 1964, 40 CFR Part 7, and 41 CFR Part 60-1 Subpart A;
- Affirmative Action requirements pursuant to 41 CFR Part 60-4;
- Non-discrimination requirements pursuant to Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972;
- Encouragement of participation of Service-Disabled Veteran-Owned Business Enterprises (“SDVOB”) in accordance with New York State Executive Law, Article 17-B and 9 NYCRR Part 252;
- American Iron and Steel (“AIS”) pursuant to P.L. 113-76, Consolidated Appropriates Act, 2014; WRRDA Section 608 of the Federal Water Pollution Control Act, as revised;
- Davis Bacon Related Acts (“DBRA”) consisting of the following: The Davis Bacon Act; Copeland Act (40 U.S.C. § 3145); Reorganization Plan No. 14; Department of Labor 29 CFR Parts 1, 3, and 5; Contract Work Hours and Safety Standards Act;
- Requirements regarding suspension and debarment pursuant to 2 CFR Part 180, 2 CFR Part 1532, 29 CFR § 5.12, State Labor Law § 220-b, and State Executive Law § 316; and,
- Restrictions on Lobbying pursuant to 40 CFR Part 34.

EFC or its authorized representatives, and other governmental entities as applicable, reserve the right to conduct occasional site inspections to monitor compliance with SRF program requirements.

This document is not intended to be inclusive of all applicable legal requirements and there may be other legal requirements that need to be included in a particular Contract or Subcontract that are not set forth here. Accordingly, EFC recommends that Recipients, Contractors, Subcontractors, and any other involved entities consult their legal counsel for advice on compliance with all applicable laws, including but not limited to local laws. This document is not intended to be legal advice.

Refer to the EFC website at www.efc.ny.gov for the latest version of the bid packet to ensure that the most recent forms and contract language are being used.

REQUIRED CONTRACT LANGUAGE

Part 2 of this document is the Required Contract Language. All of the language in Part 2 must be inserted in to all Contracts and Subcontracts funded in whole or in part with SRF funds, in order for SRF Recipients, Contractors, and Subcontractors to comply with the above-listed SRF program requirements.

GUIDANCE MATERIALS

Part 3 of this document sets forth Guidance Materials intended to assist SRF Recipients, Contractors, and Subcontractors in complying with the foregoing SRF program requirements, as applicable.

The Guidance Materials are for informational purposes only and are not intended to be used as contractual language. Please do not incorporate the Guidance Materials into any Contracts or Subcontracts.

COMMONLY USED TERMS

The following commonly used terms are defined herein as follows:

“Contract” means an agreement between a Recipient and a Contractor.

“Contractor” means all bidders, prime contractors, Service Providers, and consultants as hereinafter defined, unless specifically referred to otherwise.

“Service Provider” means any individual or business enterprise that provides one or more of the following: legal, engineering, financial advisory, technical, or other professional services, supplies, commodities, equipment, materials, or travel.

“Subcontract” means an agreement between a Contractor and a Subcontractor.

“Subcontractor” means any individual or business enterprise that has an agreement, purchase order, or any other contractual arrangement with a Contractor.

“Recipient” means the party, other than EFC, to a grant agreement or a project finance agreement with EFC through which funds for the payment of amounts due thereunder are being paid in whole or in part.

“State” means the State of New York.

“Treatment Works” is defined in Clean Water Act (CWA) Section 212.

“Nonpoint Source Projects” and **“Green Infrastructure Projects”** are defined in CWA Section 319.

“Estuary Management Program Project” is defined in CWA Section 320.

PART 2:

REQUIRED CONTRACT LANGUAGE

SECTION 1 REQUIREMENTS AND PROCEDURES FOR BUSINESS PARTICIPATION OPPORTUNITIES FOR FEDERAL DISADVANTAGED BUSINESS ENTERPRISES AND NEW YORK STATE CERTIFIED MINORITY- AND WOMEN- OWNED BUSINESS ENTERPRISES AND EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITY GROUP MEMBERS AND WOMEN

The Equal Employment Opportunities requirements of this section apply to Contracts and Subcontracts greater than \$10,000, with the exception of the EEO Workforce Employment Utilization Report requirement which applies to construction Contracts and Subcontracts greater than \$50,000.

The Minority- and Women- Owned Business Enterprises ("MWBE") and Disadvantaged Business Enterprises ("DBE") requirements of this section apply to Contractors and Subcontractors working pursuant to: (1) construction Contracts greater than \$100,000; (2) Contracts that are initially under this threshold but subsequent change orders or contract amendments increase the Contract value to above \$100,000; and, (3) change orders greater than \$25,000.

Disregard this section if it does not apply to this Contract or Subcontract.

I. General Provisions

A. Contractors and Subcontractors are required to comply with the following provisions:

1. New York State Executive Law Article 15-A and 5 NYCRR Parts 140-145 ("MWBE Regulations") for all State contracts as defined therein, with a value (1) in excess of \$25,000 for labor, services (including, but not limited to, legal, financial, and other professional services), supplies, equipment, materials, or any combination of the foregoing, or (2) in excess of \$100,000 for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon.
2. 40 CFR Part 33 ("Federal DBE Regulations") for contracts under EPA financial assistance agreements, as those terms are defined therein.
3. Title VI of the Civil Rights Act of 1964 and 40 CFR Part 7 ("Title VI") for any program or activity receiving federal financial assistance, as those terms are defined therein.
4. Title VII of the Civil Rights Act of 1964 and 41 CFR Part 60-1 Subpart A ("Title VII") for construction contracts related to any government programs providing federal financial assistance, as those terms are defined therein.
5. 41 CFR Part 60-4 ("Federal Affirmative Action Regulations") for federal or federally assisted construction contracts in excess of \$10,000, as those terms are defined therein.
6. Section 504 of the Rehabilitation Act of 1973 ("Section 504") for any program or activity receiving federal financial assistance, as those terms are defined therein.
7. The Age Discrimination Act of 1975 ("Age Discrimination Act") for any program or activity receiving federal financial assistance, as those terms are defined therein.
8. Section 13 of the Federal Water Pollution Control Act ("Clean Water Act") Amendments of 1972 ("Section 13") for any program or activity receiving federal financial assistance under the Clean Water Act, as those terms are defined therein.

B. The Contractor and Subcontractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this Contract. The Contractor and Subcontractor shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA

financial assistance agreements. Failure by the Contractor and Subcontractor to carry out these requirements is a material breach of this Contract which may result in the termination of this Contract or other legally available remedies.

- C. Contractors and Subcontractors shall have instituted grievance procedures to assure the prompt and fair resolution of complaints when a violation of Title VI of the Civil Rights Act of 1964 or Title 40 CFR Part 7 is alleged.
- D. Failure to comply with all of the requirements herein may result in a finding by the Recipient that the Contractor is non-responsive, non-responsible, and/or has breached the Contract, leading to the withholding of funds or such other actions, liquidated damages pursuant to subsection III(F) of this section, or enforcement proceedings as allowed by the Contract.
- E. If any terms or provisions herein conflict with Executive Law Article 15-A, the MWBE Regulations, Federal DBE Regulations, Title VI, Title VII, or Federal Affirmative Action Regulations, such law and regulations shall supersede these requirements.
- F. Upon request from the Recipient's Minority Business Officer ("MBO") and/or EFC, Contractor will provide complete responses to inquiries and all MWBE and EEO records available within a reasonable time. For purposes of this section, MBO means the duly authorized representative of the SRF Recipient for MWBE and EEO purposes.

II. Equal Employment Opportunities (EEO)

- A. Each Contractor and Subcontractor performing work on the Contract shall undertake or continue existing EEO programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. For these purposes, EEO shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation.
- B. Contractor represents that it has submitted an EEO policy statement to Recipient prior to the execution of this Contract.
- C. Contractor represents that it's EEO policy statement includes the following language:
 - 1. The contractor will not discriminate on the basis of race, creed, color, national origin, sex, age, disability, or marital status against any employee or applicant for employment, will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination and will make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on Contracts relating to SRF projects.
 - 2. The Contractor shall state in all solicitations or advertisements for employees that, in the performance of the Contract relating to this SRF project, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.
 - 3. 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.
- D. The Contractor will include the provisions of Subdivisions II(A), II(C), and II(E) in every Subcontract in such a manner that the requirements of these subdivisions will be binding upon each Subcontractor as to work in connection with the Contract.
- E. The Contractor shall comply with the provisions of the Human Rights Law (Executive Law Article 15), Title VI, Title VII, the Federal Affirmative Action Regulations, Section 504, Age Discrimination

Act, Section 13, and all other State and Federal statutory and constitutional non-discrimination provisions. The Contractor and Subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.

F. The Contractor shall display the EEO poster at the project site in a visible location. The EEO poster can be found at <https://www.dol.gov/ofccp/regs/compliance/posters/pdf/eeopost.pdf>.

G. Required EEO Form

1. EEO Workforce Employment Utilization Report ("Workforce Report")

- a. The Contractor shall submit a Workforce Report, and shall require each of its Subcontractors to submit a Workforce Report to the Recipient, in such format as shall be required by EFC on a monthly basis during the term of the Contract.
- b. Separate forms shall be completed by Contractor and any Subcontractor.
- c. In limited instances, the Contractor may not be able to separate out the workforce utilized in the performance of the Contract from the Contractor's and/or Subcontractor's total workforce. When a separation can be made, the Contractor shall submit the Workforce Report and indicate that the information provided related to the actual workforce utilized on the Contract. When the workforce to be utilized on the Contract cannot be separated out from the Contractor's and/or Subcontractor's total workforce, the Contractor shall submit the Workforce Report and indicate that the information provided is the Contractor's total workforce during the subject time frame, not limited to work specifically under the Contract.

III. Business Participation Opportunities for MWBEs

A. Contract Goals

1. For purposes of this Contract, EFC establishes the following goals for New York State certified MWBE participation ("MWBE Combined Goals") based on the current availability of qualified MBEs and WBEs.

Program	MWBE Combined Goal*
CWSRF, DWSRF, & Green Innovation Grant Program	20%
NYS Water Infrastructure Improvement Act Grants (also receiving EFC loan)	Clean Water project 23% Drinking Water project 26%
NYS Intermunicipal Grants (also receiving EFC loan)	Clean Water project 24% Drinking Water project 24%
NYS financial assistance only	30%
Engineering Planning Grant	30%

*May be any combination of MBE and/or WBE participation

2. For purposes of providing meaningful participation by MWBEs on the Contract and achieving the MWBE Contract Goals established in Section III-A hereof, the Contractor should reference the directory of New York State Certified MBWEs found at the following internet address: <https://ny.newnycontracts.com>.
3. The Contractor understands that only sums paid to MWBEs for the performance of a commercially useful function, as that term is defined in 5 NYCRR § 140.1, may be applied towards achievement of applicable MWBE participation goals. For construction Contracts or Subcontracts, the portion of the Contract or Subcontract with an MWBE serving as a supplier, and so designated in ESD's Directory, that shall be deemed to represent the commercially useful function performed by the MWBE shall be 60% of the total value of

the Contract or Subcontract. The portion of a Contract or Subcontract with an MWBE serving as a broker, as denoted by NAICS code 425120, that shall be deemed to represent the commercially useful function performed by the MWBE shall be the monetary value for fees, or the markup percentage, charged by the MWBE.

4. Where MWBE Contract Goals have been established herein, pursuant to 5 NYCRR § 142.8, the Contractor must document "good faith efforts" to provide meaningful participation by MWBEs as Subcontractors or suppliers in the performance of the Contract.
5. In accordance with Section 316-a of Article 15-A and 5 NYCRR § 142.13, the Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the MWBE participation goals set forth in the Contract, such a finding constitutes a breach of Contract and the Contractor shall be liable to the Recipient for liquidated or other appropriate damages, as set forth herein.

B. MWBE Utilization Plan

1. The Contractor represents and warrants that Contractor has submitted an MWBE Utilization Plan to the Recipient prior to the execution of this Contract.
2. The Contractor agrees to use such MWBE Utilization Plan for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals set forth in Section III-A of this section.
3. The Contractor further agrees that a failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, the Recipient shall be entitled to any remedy provided herein, including but not limited to, a finding that the Contractor is not responsive.
4. Contractor must report any changes to the Utilization Plan after Contract award and during the term of the Contract to the Recipient's MBO. Contractor shall indicate the changes to the MBO in the next Monthly MWBE Contractor Compliance Report after the changes occurred. At EFC's discretion, an updated MWBE Utilization Plan form and good faith effort documentation may be required to be submitted. When a Utilization Plan is revised due to execution of a change order, the change order should be submitted to the MBO with the revised Utilization Plan.
5. The Contractor shall submit copies of all fully executed subcontracts, agreements, and purchase orders that are referred to in the MWBE Utilization Plan to the MBO within 30 days of their execution.

C. Requests for Waiver

1. If the Contractor, after making good faith efforts, is unable to comply with MWBE goals, the Contractor may submit a Request for Waiver to the Recipient documenting good faith efforts by the Contractor to meet such goals. If the documentation included with the waiver request is complete, the Recipient shall forward the request to EFC for evaluation, and EFC will issue a written notice of acceptance or denial within twenty (20) days of receipt.
2. If the Recipient, upon review of the MWBE Utilization Plan and updated Quarterly MWBE Contractor Compliance Reports determines that the Contractor is failing or refusing to comply with the MWBE Contract Goals and no waiver has been issued in regards to such non-compliance, the Recipient may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within seven (7) business days of receipt. Such response may include a request for partial or total waiver of MWBE Contract Goals.

D. Monthly MWBE Contractor Compliance Report ("Monthly MWBE Report")

The Contractor agrees to submit a report to the Recipient by the third business day following the end of each month over the term of this Contract documenting the payments made and the progress towards achievement of the MWBE goals of the Contract. The Monthly MWBE Report must be supplemented with proof of payment by the Contractor to its Subcontractors (e.g., copies of both sides of a cancelled check) and proof that Subcontractors have been paid within 30 days of receipt of payment from the Recipient. The final Monthly MWBE Report must reflect all Utilization Plan

revisions and change orders.

E. Required Federal DBE Forms

1. EPA Form 6100-3 - DBE Subcontractor Performance Form
Contractor represents that it has submitted the Form 6100-3 to all of its Subcontractors, all of its Subcontractors have completed the form, and that Contractor submitted such completed forms to Recipient with its bid submission.
2. EPA Form 6100-4 - DBE Subcontractor Utilization Form
Contractor represents that it has completed the Form 6100-4 and submitted such completed form to Recipient with its bid submission.
3. EPA Form 6100-2 - DBE Subcontractor Participation Form
Contractor represents that it has distributed a Form 6100-2 to its MWBE Subcontractors for completion prior to execution of this Contract.

F. Liquidated Damages - MWBE Participation

In accordance with Section 316-a of Article 15-A and 5 NYCRR §142.13, if it has been determined by the Recipient or EFC that the Contractor has willfully and intentionally failed to comply with the MWBE participation goals, the Contractor shall be obligated to pay to Recipient liquidated damages or other appropriate damages, as specified herein and as determined by the Recipient or EFC.

Liquidated damages shall be calculated as an amount not to exceed the difference between:

1. All sums identified for payment to MWBEs had the Contractor achieved the approved MWBE participation goals; and,
2. All sums actually paid to MWBEs for work performed or materials supplied under this Contract.

The Recipient and EFC reserve the right to impose a lesser amount of liquidated damages than the amount calculated above based on the circumstances surrounding the Contractor's non-compliance.

In the event a determination has been made by the Recipient or EFC which requires the payment of damages identified herein and such identified sums have not been withheld, Contractor shall pay such damages to the Recipient within sixty (60) days after they are assessed unless prior to the expiration of such sixtieth day, the Contractor has filed a complaint with the Empire State Development Corporation – Division of Minority and Women's Business Development ("ESD") pursuant to Subdivision 8 of Section 313 of the Executive Law in which event the damages shall be payable if the Director of ESD renders a decision in favor of the Recipient.

SECTION 2 PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED SERVICE-DISABLED VETERAN-OWNED BUSINESSES

New York State Executive Law Article 17-B and 9 NYCRR Part 252 provide for more meaningful participation in public procurement by certified Service-Disabled Veteran-Owned Businesses ("SDVOBs"), thereby further integrating such businesses into New York State's economy. EFC recognizes the need to promote the employment of service-disabled veterans and to ensure that certified service-disabled veteran-owned businesses have opportunities for maximum feasible participation in the performance of EFC contracts.

In recognition of the service and sacrifices made by service-disabled veterans and in recognition of their economic activity in doing business in New York State, Contractors are strongly encouraged and expected to consider SDVOBs in the fulfillment of the requirements of the Contract. Such participation may be as Subcontractors or suppliers, as protégés, or in other partnering or supporting roles.

Contractor is encouraged to make good faith efforts to promote and assist in the participation of SDVOBs

on the Contract for the provision of services and materials. The directory of New York State Certified SDVOBs can be viewed at: <http://ogs.ny.gov/Core/SDVOBA.asp>

Contractor is encouraged to contact the Office of General Services' Division of Service-Disabled Veteran's Business Development at 518-474-2015 or VeteransDevelopment@ogs.ny.gov to discuss methods of maximizing participation by SDVOBs on the Contract.

SECTION 3 AMERICAN IRON AND STEEL (AIS) REQUIREMENT

The requirements of this section apply to (1) all construction Contracts and Subcontracts for DWSRF projects and CWSRF treatment works projects and (2) all contracts for the purchase of iron and steel products for a DWSRF project or CWSRF treatment works project. Disregard this section if it does not apply to this Contract or Subcontract.

The Contractor acknowledges to and for the benefit of the Recipient of the Clean Water State Revolving Fund ("CWSRF") or the Drinking Water State Revolving Fund ("DWSRF") financial assistance that the Contractor understands the goods and services under this Agreement are being funded with monies made available by the New York State Environmental Facilities Corporation ("EFC") through the CWSRF or the DWSRF and that such funding is subject to certain statutory restrictions requiring that certain iron and steel products used in the project be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contractor pursuant to this Agreement.

The Contractor hereby represents and warrants that:

- (a) the Contractor has reviewed and understands the American Iron and Steel Requirement,
- (b) all of the iron and steel products covered by the American Iron and Steel Requirement used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and
- (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Recipient.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Recipient to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Recipient resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the EFC or any damages owed to the EFC by the Recipient). While the Contractor has no direct contractual privity with the EFC, as a lender to the Recipient for the funding of this project, the Recipient and the Contractor agree that the EFC is a third-party beneficiary and neither this paragraph, nor any other provision of this Agreement necessary to give this paragraph force or effect, shall be amended or waived without the prior written consent of the EFC.

SECTION 4 DAVIS-BACON (DB) PREVAILING WAGE REQUIREMENTS

The requirements of this section apply to all construction Contracts and Subcontracts greater than \$2000 for either DWSRF projects or CWSRF treatment works projects. Disregard this section if it does not apply to this Contract or Subcontract.

For Contracts in Excess of \$2,000:

1. Minimum Wages

- (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates

not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis–Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (1)(ii) of this section) and the Davis–Bacon poster (WH–1321) shall be posted at all times by the Contractor and its Subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. The Davis-Bacon poster (WH-1321) can be found at <https://www.dol.gov/whd/regs/compliance/posters/davis.htm>.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the Contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

1. The work to be performed by the classification requested is not performed by a classification in the wage determination;
2. The classification is utilized in the area by the construction industry; and,
3. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (1) (ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may

consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program *provided* that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis–Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding. The Recipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis–Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any Subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the Contract, the Recipient may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis–Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR § 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis–Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The Contractor shall submit weekly for each week in which any Contract work is performed a copy of all payrolls to the Recipient if the Recipient is a party to the contract, but if the Recipient is not such a party, the Contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Recipient. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR § 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime Contractor is responsible for the submission of copies of payrolls by all Subcontractors. Contractors and Subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Recipient if the Recipient is a party to the contract, but if the Recipient is not such a party, the Contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the Recipient, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime Contractor to require a Subcontractor to provide addresses and social security numbers to the prime Contractor for its own records, without weekly submission to the Recipient (or

the applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or Subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The Contractor or Subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Recipient or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or Subcontractor fails to submit the required records or to make them available, the Recipient may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR § 5.12.

4. Apprentices and trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or Subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a

percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR § 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

5. Compliance with Copeland Act Requirements. The Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this Contract.

6. Subcontracts. The Contractor or Subcontractor shall insert in any Subcontracts the clauses contained in 29 CFR § 5.5(a)(1) through (10) and such other clauses as the Recipient may by appropriate instructions require, and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any Subcontractor or lower tier subcontractor with all the Contract clauses in 29 CFR § 5.5.

7. Contract Termination: Debarment. A breach of the contract clauses in 29 CFR § 5.5 may be grounds for termination of the Contract, and for debarment as a Contractor and a Subcontractor as provided in 29 CFR § 5.12.

8. Compliance with Davis–Bacon and Related Act requirements. All rulings and interpretations of the Davis–Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this Contract.

9. Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and the Recipient, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. § 1001.

For Contracts in Excess of \$100,000:

1. Overtime requirements. No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any Subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$25 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

3. Withholding for unpaid wages and liquidated damages. The Recipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or Subcontractor under any such Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

4. Subcontracts. The Contractor or Subcontractor shall insert in any Subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any Subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

5. In any Contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR § 5.1, the Contractor or Subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the Contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the records to be maintained under this paragraph shall be made available by the Contractor or Subcontractor for inspection, copying, or transcription by authorized representatives of the Recipient and the Department of Labor, and the Contractor or Subcontractor will permit such representatives to interview employees during working hours on the job.

SECTION 5 REQUIREMENTS REGARDING SUSPENSION AND DEBARMENT

The requirements of this section apply to all Contracts and Subcontracts.

Contractor and any Subcontractors shall comply with, Subpart C of 2 CFR Part 180 as implemented and supplemented by 2 CFR Part 1532. The Contractor is not a debarred or suspended party under 2 CFR Part 180 or 2 CFR Part 1532, or 29 CFR § 5.12. Neither the Contractor nor any of its Subcontractors have contracted with, or will contract with, any debarred or suspended party under the foregoing regulations.

The Contractor and any Subcontractors have not been deemed ineligible to submit a bid on or be awarded a public contract or subcontract pursuant to Article 8 of the State Labor Law, specifically Labor Law § 220-b. In addition, neither the Contractor nor any Subcontractors have contracted with, or will contract with, any party that has been deemed ineligible to submit a bid on or be awarded a public contract or subcontract under Labor Law § 220-b.

In addition, the Contractor and any Subcontractors have not been deemed ineligible to submit a bid and have not contracted with and will not contract with any party that has been deemed ineligible to submit a bid under Executive Law § 316.

SECTION 6 RESTRICTIONS ON LOBBYING

The requirements of this section apply to all Contracts and Subcontracts greater than \$100,000. Disregard this section if it does not apply to this Contract or Subcontract.

The Contractor and any Subcontractor executing a Contract or Subcontract in excess of \$100,000 agree to provide to the Recipient an executed Certification Regarding Lobbying pursuant to 40 CFR Part 34 ("Lobbying Certification") in the form attached hereto as Attachment 9, consistent with the prescribed form provided in Appendix A to 40 CFR Part 34.

PART 3:

GUIDANCE MATERIALS

APPLICABILITY OF PROGRAM REQUIREMENTS

This chart contains a listing of the SRF program requirements contained within this document, as well as the following details regarding each requirement: (1) its applicability, i.e., what types of contracts/subcontracts, particular monetary thresholds if applicable; (2) a section reference to the Required Contract Language that applies from Part 2; and (3) a section reference to the Guidance that applies from this Part.

Requirement	Applicability	Section of Required Contract Language from Part 2	Section of Appropriate Guidance from Part 3
Minority- and Women- Owned Business Enterprises (MWBE) and Disadvantaged Business Enterprises (DBE)	Contractors and Subcontractors working pursuant to: (1) Construction Contracts greater than \$100,000 (2) Contracts that are initially under this threshold but subsequent change orders or Contract amendments increase the Contract value above \$100,000 (3) Change orders greater than \$25,000	1	1
Equal Employment Opportunities (EEO)	Contracts and Subcontracts greater than \$10,000, with the exception of the EEO Workforce Employment Utilization Report requirement which applies to construction Contracts and Subcontracts greater than \$50,000	1	1
Service-Disabled Veteran-Owned Businesses (SDVOB)	Not required, but strongly encouraged	2	2
American Iron and Steel (AIS)	All construction Contracts and Subcontracts for DWSRF projects and CWSRF treatment works projects	3	3
Davis-Bacon (DB) Prevailing Wages	All construction Contracts and Subcontracts greater than \$2000 for either DWSRF projects or CWSRF treatment works projects	4	4
Suspension and Debarment	All Contracts and Subcontracts	5	5
Restrictions on Lobbying	All Contracts and Subcontracts greater than \$100,000	6	6

SECTION 1 GUIDANCE FOR THE REQUIREMENTS AND PROCEDURES FOR BUSINESS PARTICIPATION OPPORTUNITIES FOR FEDERAL DISADVANTAGED BUSINESS ENTERPRISES AND NEW YORK STATE CERTIFIED MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES AND EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITY GROUP MEMBERS AND WOMEN

I. Summary of EEO, MWBE, and DBE Forms

A. Forms to be Submitted Prior to Contract Execution

1. EEO Policy Statement

To be submitted by the Contractor to the Recipient's Minority Business Officer ("MBO") prior to Contract execution. The "MBO" refers to the duly authorized representative of the SRF Recipient for MWBE and EEO purposes. This form is attached hereto as Attachment 1. See Required Contract Language, Section 1(II).

2. EPA Form 6100-3 – DBE Subcontractor Performance Form

To be submitted by the Contractor to the MBO with its bid submission. This form is attached hereto as Attachment 7. See Required Contract Language, Section 1(III)(E).

3. EPA Form 6100-4 – DBE Subcontractor Utilization Form

To be submitted by the Contractor to the MBO with its bid submission. This form is attached hereto as Attachment 8. See Required Contract Language, Section 1(III)(E).

4. EPA Form 6100-2 – DBE Subcontractor Participation Form

To be submitted by the Subcontractors to the MBO prior to Contract execution. The Contractor must provide the form to the Subcontractors for completion. The Contractor should also submit documentation (e.g., email, letter, certified mail receipt) to the MBO that the 6100-2 form was made available to the MWBE Subcontractors. This form is attached hereto as Attachment 6. See Required Contract Language, Section 1(III)(E).

5. MWBE Utilization Plan

To be submitted by the Contractor to the MBO after the bid opening, but in no case more than ten (10) business days after the Contractor receives notice from the Recipient that the Contractor has submitted a low bid. This form is attached hereto as Attachment 4. See Required Contract Language, Section 1(III)(B).

B. Forms to be Submitted During the Term of the Contract

1. EEO Workforce Employment Utilization Report ("Workforce Report")

To be submitted by the Contractor to the MBO on a monthly basis during the term of the Contract. An exemplar form with instructions is attached hereto as Attachment 2. The actual Excel fillable form for Contractors and Subcontractors to complete will be e-mailed to MBOs by EFC at the start of the Contract term. See Required Contract Language, Section 1(II)(G).

2. Request for Partial or Total Waiver

If applicable, to be submitted by the Contractor to the MBO at any time during the term of the Contract, but not later than prior to the submission of a request for final payment on the Contract. This form is attached hereto as Attachment 5. See Required Contract Language, Section 1(III)(C).

3. Monthly MWBE Contractor Compliance Report ("Monthly MWBE Report")

To be submitted by the Contractor to the MBO by the third business day following the end of each month over the term of the Contract. This form is attached hereto as Attachment 3. See Required Contract Language, Section 1(III)(D).

II. Equal Employment Opportunities (EEO)

Pursuant to 41 CFR Part 60-4, the United States Department of Labor has established EEO goals for the employment of minorities and women. For federal and federally assisted construction Contractors, goals for minorities and females are established as a percentage participation rate. These goals are applicable to all of a Contractor's construction work sites (whether or not these sites are also the result of a federal Contract or are federally assisted). The goals are applicable to each nonexempt Contractor's total onsite construction workforce, regardless of whether or not part of that workforce is performing work on a federal, federally assisted or non-federally related project Contract or Subcontract. Contractors should apply to each work site the goal for the geographical area that each particular work site is located in. These goals, and further information, are available at:

https://www.dol.gov/ofccp/TAguides/TAC_FedContractors_JRF_QA_508c.pdf.

III. Business Participation Opportunities for MWBEs

A. Contract Goals

The goals provided herein (Required Contract Language, Section 1(III)(A)) are effective as of October 1, 2017. MWBE participation goals for a contract will be based on the goals in place at the time of the execution date of each respective contract, unless otherwise specified. In certain instances, the goals may vary, such as with projects co-funded by EFC and other state/federal agencies. With some co-funded projects, EFC may defer to the MBE and WBE participation goals and program established by those agencies.

Please contact EFC if you have any questions about the applicable MWBE participation goals for your contract.

B. Good Faith Efforts

The Contractor must make good faith efforts to develop an adequate MWBE Utilization Plan and must continue such good faith efforts in order to meet applicable MWBE participation goals. The Contractor shall maintain documentation of good faith efforts to solicit participation of MWBE firms for SRF-funded projects. If a Contractor is unable to meet contract MWBE participation goals, and submits a Request for Waiver, documentation of such good faith efforts must accompany the request. See Required Contract Language, Section 1(III)(C).

Contractor should also continue good faith efforts to seek opportunities for MWBE participation during the life of the contract even if proposed goals have been achieved.

Examples of documentation of good faith efforts are set forth below:

- Information on the scope of work related to the contract, such as a copy of the schedule of values from the bid submission, and specific steps taken to reasonably structure the scope of work to break out tasks or equipment needs for the purpose of providing opportunities for subcontracting with, or obtaining supplies or services from, MBEs or WBEs.
- Printed screenshots of the directory of Certified Minority- and Women- Owned Business Enterprises ("MWBE directory") on ESD's website on a Statewide basis, if appropriate, for both MBEs and WBEs that provide the services or equipment necessary for the contract. Contact the MBO for assistance in performing a proper search including identifying a sufficient number of solicitations to show that good faith effort was made.
- Copies of timely solicitations and documentation (e.g., faxes and emails) that the Contractor offered relevant plans, specifications, or other related materials to MBE and WBE firms on ESD's MWBE directory to participate in the work, with the responses.

- A log prepared by the Contractor in a sortable spreadsheet documenting the Contractor's solicitation of MBEs and WBEs for participation as Subcontractors or suppliers pursuant to a contract. The log should consist of the list of MBE and WBE firms solicited, their contact information, the type of work they were solicited to perform (or equipment to provide), how the solicitation was made (fax, phone, email) and the contact information, the contacts name and the outcome. If a bid was received, the bid price should also be included in the log. See a sample log format below:

Date	M/WBE Type	Company	Scope of work	Contact Name	Phone/ Email	Solicitation Format	MWBE Response	Negotiation Required?	Selected? If not, Explain

If no response was received to an initial solicitation, at least one follow-up solicitation should be made in a different format than the first, e.g. fax followed by phone call. Any bids received from non-MWBE firms for the same areas MWBEs were solicited should also be tracked on the log.

- Copies of the EPA 6100-3 and 6100-4 forms that are required with the bid submission. A properly completed EPA 6100-3 form is good indication of a contact to an MWBE and their response to the contact. If solicitations do not result in obtaining sufficient participation of MWBE firms due to non-responsiveness, please contact the MBO or EFC MWBE representative for support.
- Copies of any advertisements of sufficient duration to effectively seek participation of certified MBE and WBEs timely published in appropriate general circulation, trade and MWBE oriented publications, together with listing and dates of publication of such advertisements. EFC recommends the use of the NYS Contract Reporter that is free to all Contractors - <https://www.nyscr.ny.gov/>. A log should be kept of the responses to the ads, similar to the log for MWBE firm solicitation and should include the non-MWBE firms that responded and the bid prices. Any negotiations should be documented in the log.
- Documents demonstrating that insufficient MBEs or WBEs are reasonably available to perform the work.
- A written demonstration that the Contractor offered to make up any inability to meet the project MWBE participation goals in other contracts and/or agreements performed by the Contractor on another SRF funded project.
- The date of pre-bid, pre-award, or other meetings scheduled by the Recipient, if any, and the contact information of any MBEs and WBEs who attended and are capable of performing work on the project.
- Any other information or documentation that demonstrates the Contractor conducted good faith efforts to provide opportunities for MWBE participation in their work. For instance, Prime Contractors and MBOs should develop a list of MWBE firms that have expressed interest in working on SRF-funded projects
- The use of certified DBE and small businesses certified through the US Small Business Administration (SBA) may be considered as a demonstration of Good Faith Efforts.

C. MWBE Utilization Plan

1. The MWBE Utilization Plan must be submitted to the Recipient's MBO after the bid opening, but in no case more than ten (10) business days after the Contractor receives notice from the Recipient that the Contractor has submitted a low bid.

2. The MBO will evaluate a completed MWBE Utilization Plan. If the MBO finds the Utilization Plan sufficient, it will be forwarded to EFC for review. If the MBO finds the Utilization Plan insufficient, the MBO will work with the Contractor to address deficiencies before submitting to EFC for review. A written notice of acceptance or deficiency will be issued by EFC within 20 business days of receipt of the Utilization Plan. Upon receipt of a notice of deficiency from either the MBO or EFC, the Contractor shall respond with a written remedy to such notice within seven (7) business days of receipt.
3. In coordination with the MBO, EFC will accept an MWBE Utilization Plan upon consideration of many factors, including the following:
 - a. The MWBE Utilization Plan indicates that the proposed goals for the project will be achieved;
 - b. A Contractor, who is a certified MBE or WBE, will be credited for up to 100% of the category of their certification. However, good faith efforts to seek participation in the other category are also required; and,
 - c. Adequate documentation to demonstrate good faith efforts and/or support a specialty equipment/services waiver as described below in Section III(E).
4. EFC reserves the right to request additional information and/or documentation to support the adequacy of the MWBE Utilization Plan.
5. Within 10 days of EFC's acceptance of a MWBE Utilization Plan, EFC will post the approved Utilization Plan on the EFC website.
6. In coordination with the MBO, EFC may issue conditional acceptance of Utilization Plans pending submission of additional documentation that demonstrates there will be an increase in MWBE participation.

D. Eligibility for MWBE Participation Credit

1. To receive MWBE participation credit, Contractors or Subcontractors performing work that have been identified in an approved MWBE Utilization Plan must be certified as an MBE or WBE by ESD.
2. Prime Contractors may also include second or lower tier Subcontractors (Subcontractors hired by Subcontractors) on their MWBE Utilization Plan.
3. Credit for MWBE participation shall be granted only for MWBE firms performing a commercially useful business function according to custom and practice in the industry.
 - a. Factors to be used in assessing whether an MWBE is performing a commercially useful function include:
 - i. The amount of work subcontracted;
 - ii. Industry practices;
 - iii. Whether the amount the MWBE is to be paid under the contract is commensurate with the work it is to perform;
 - iv. The credit claimed towards MWBE utilization goals for the performance of the work by the MWBE; and,
 - v. Any other relevant factors.
 - b. "Commercially useful functions" normally include:
 - i. Providing technical assistance to a purchaser prior to a purchase, during installation, and after the supplies or equipment are placed in service;
 - ii. Manufacturing or being the first tier below the manufacturer of supplies or equipment;
 - iii. Providing functions other than merely accepting and referring requests for supplies or equipment to another party for direct shipment to a Contractor; or,
 - iv. Being responsible for ordering, negotiating price, and determining quality and quantity of materials and supplies.
 - c. For construction Contracts or Subcontracts, the following rules apply when calculating MWBE utilization:
 - i. The portion of a Contract or Subcontract with an MWBE serving as a manufacturer that shall be deemed to represent the commercially useful

function performed by the MWBE shall be 100% of the total value of the Contract or Subcontract.

- ii. the portion of a Contract or Subcontract with an MWBE serving as a supplier (as denoted by a NAICS code beginning with 423 or 424, or a NIGP code that does not begin with the number 9), and so designated in ESD's Directory, that shall be deemed to represent the commercially useful function performed by the MWBE shall be 60% of the total value of the Contract or Subcontract.
 - iii. the portion of a Contract or Subcontract with an MWBE serving as a broker (as denoted by NAICS code 425120) that shall be deemed to represent the commercially useful function performed by the MWBE shall be the monetary value for fees, or the markup percentage, charged by the MWBE.
4. No credit will be granted for MWBEs that do not perform a commercially useful function. An MWBE does not perform a commercially useful function if its role adds no substantive value and is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of participation.

E. Requests for Waiver

1. If the Contractor's application of good faith efforts does not result in the utilization of MWBE firms to achieve the aforementioned goals or a specialty equipment/service waiver is requested, the Contractor may request a full or partial waiver of MWBE participation goals by completing a Request for Waiver form, attaching appropriate documentation of good faith efforts, and submitting same to the MBO. See also Required Contract Language, Section 1(III)(C). Even if an MWBE waiver is granted, EEO information must still be submitted.
2. The MBO and EFC will review each waiver request based on the good faith effort criteria presented above and the documentation submitted with the waiver request. EFC will not issue any automatic waivers from MWBE responsibilities.
3. In cases where EFC accepts a full or partial waiver of MWBE participation goals, the waiver request will be posted to EFC's website.
4. Specialty Equipment/Service Waiver: A specialty equipment/service waiver may be granted in cases where:
 - a. equipment is made by only one non-MWBE manufacturer,
 - b. the technical specifications call for equipment that is not available through an MWBE supplier;
 - c. the equipment is constructed on site by specially trained non-MWBE labor;
 - d. the service is not available through an MWBE (such as work done by National Grid);
 - e. the service is proprietary in nature (such as use of certain computer software necessary for control systems); or,
 - f. the service cannot be subcontracted (such as litigation services).

If the contract includes specialty equipment or services, and documentation is submitted demonstrating that there are no MWBE firms capable of completing this portion of the contract, the specialty amount of the contract may be deducted from the total contract amount to determine the MWBE Eligible Amount and the goals will be applied to the MWBE Eligible Amount. This determination is made at the discretion of the MBO and EFC.

Example:

\$200,000	-	\$50,000	=	\$150,000
(Contract)		(Specialty equipment/service)		(MWBE Eligible Amount)

The MWBE goal is applied to the MWBE Eligible Amount.

A request for this specialty equipment/service deduction can be completed by filling out a Request for Waiver form and submitting it to the MBO. The request must include a copy of the page from the contract where the equipment/ service is described and the cost of each item. For construction contracts, the schedule of values or bid tabulation sheet

should also be submitted. Additional documentation may be requested by the MBO or EFC.

IV. Subcontractor's Responsibilities

Subcontractors should:

1. Maintain their MWBE certifications, and notify the Contractor and MBO of any change in their certification status.
2. Notify the Contractor of any MWBE Subcontractors they hire so they may be included on the Contractor's Utilization Plan.
3. Respond promptly to solicitation requests by completing and submitting bid information in a timely manner.
4. Maintain business records that should include, but not be limited to, contracts/agreements, records of receipts, correspondence, purchase orders, and canceled checks.
5. Complete and submit the EPA Form 6100-3 - DBE Subcontractor Performance Form to the Contractor prior to submission of the Contractor's bid to the Recipient.
6. Complete and return EPA Form 6100-2 - DBE Subcontractor Participation Form to the Recipient prior to Contractor's execution of the contract.
7. Ensure that a required EEO Policy Statement and applicable MWBE requirements are included in each subcontract.
8. Notify the MBO and EFC when contract problems arise, such as non-payment for services or when the Subcontractor is not employed as described in the MWBE Utilization Plan.

V. Protests/Complaints

Contractors or Subcontractors who have any concerns, issues, or complaints regarding the implementation of the SRF MWBE & EEO Program, or wish to protest should do so in writing to the MBO and EFC. The MBO, in consultation with EFC, will review the circumstances described in the submission, investigate to develop additional information, if warranted, and determine whether action is required. If the Contractor or Subcontractor believes the issue has not been resolved to their satisfaction, they may appeal in writing to EFC for consideration.

VI. Waste, Fraud and Abuse

Subcontractors, Contractors, or Recipients who know of or suspect any instances of waste, fraud, or abuse within the MWBE & EEO Program should notify the project MBO and EFC immediately. Additionally, suspected fraud activity should be reported to the USEPA – Office of Inspector General Hotline at (888) 546-8740, the New York State Office of Inspector General at (800) 367-4448, or the ESD Compliance Office at (212) 803-3266.

SECTION 2 GUIDANCE FOR NEW YORK STATE CERTIFIED SERVICE-DISABLED VETERAN-OWNED BUSINESS ENTERPRISES (“SDVOB”) PARTICIPATION OPPORTUNITIES

Contractor may contact the Office of General Services' Division of Service-Disabled Veteran's Business Development at 518-474-2015 or VeteransDevelopment@ogs.ny.gov to discuss methods of maximizing participation by SDVOBs on the Contract. The directory of New York State Certified SDVOBs can be viewed at: <http://ogs.ny.gov/Core/SDVOBA.asp>

Please contact EFC if you have any questions about utilizing SDVOBs on the Contract.

SECTION 3 GUIDANCE FOR AMERICAN IRON AND STEEL (“AIS”) REQUIREMENT

Since 2014, if a Recipient uses CWSRF or DWSRF financial assistance to fund all or a part of the construction, alteration, maintenance or repair a public water system or treatment works, the Recipient must use iron and steel products that are produced in the United States for the whole project.

The AIS requirement does not apply to:

1. a project for which engineering plans and specifications were submitted for review by the responsible State agency before January 17, 2014 and approved by that agency before April 15, 2014; or
2. a project funded by a financial assistance agreement with EFC that was signed before January 17, 2014.

The term “iron and steel products” means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, construction materials. For one of the listed products to be considered subject to the AIS requirement, it must be made of greater than 50% iron and steel, measured by material cost (with the exception of reinforced precast concrete products).

The term “produced in the United States” means that all manufacturing processes of the iron or steel, including application of coatings, take place in the United States, with the exception of metallurgical processes involving refinement of steel additives. All manufacturing processes includes processes such as melting, refining, forming, rolling, drawing, finishing, fabricating and coating. Further, if a domestic iron and steel product is taken out of the US for any part of the manufacturing process, it becomes foreign source material. However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement and the material(s), if any, being applied as a coating are similarly not covered. Non-iron or steel components of an iron and steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-iron and steel components do not have to be of domestic origin.

The EPA may waive the AIS requirement for a treatment works project if:

1. applying the requirement would be inconsistent with the public interest;
2. iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
3. inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

A request for a waiver to use foreign iron or steel products must include adequate information for EPA's evaluation of the request, including:

1. A description of the foreign and domestic iron, steel, and/or manufactured goods;
2. Unit of measure;
3. Quantity;
4. Cost;
5. Time of delivery or availability;
6. Location of the project;
7. Name and address of the proposed supplier; and,
8. A detailed justification for use of foreign iron or steel products.

Requests for AIS waivers are to be submitted to EFC. Upon review, EFC will submit AIS waiver requests to EPA. When EPA receives a request for a waiver, EPA will publish the request and any accompanying material on EPA's official public Internet site, allowing informal public input on the request for at least 15 days before granting or denying the waiver request.

Additionally, EPA has the authority to issue waivers that are national in scope. National waivers may be for specific products or in the public's interest. These waivers can be found at EPA's website at: <https://www.epa.gov/cwsrf/american-iron-and-steel-requirement-approved-national-waivers-0>
The "De Minimis Waiver" is noteworthy. The waiver permits the use of iron and steel products when they occur in de minimis incidental components of DWSRF or CWSRF projects, as long as:

1. the funds used for the de minimis incidental components cumulatively comprise no more than 5% of the total cost of the materials used in a project; and,
2. the cost of an individual item does not exceed 1% of the total cost of the materials used in the project.

Items covered by the de minimis waiver are:

1. essential, but incidental to the construction;
2. incorporated into the physical structure of the project; and,
3. often low-cost and bought in bulk.

Examples of "de minimis" items include: washers, screws, nuts, bolts, fasteners, miscellaneous wire, corner bead, ancillary tubing, etc.

Examples of items that are NOT incidental and therefore are not considered "de minimis" include: process fittings, tees, elbows, flanges, brackets, valves, sewer or water pipes for distribution, treatment or storage tanks, large structural support systems, etc.

To use the de minimis waiver, Contractors should prepare a record in spreadsheet form that tracks the cost of all materials incorporated into the project. This spreadsheet can be either project specific or contract specific. If it is contract specific, a material tracking record for each construction contract should be prepared and items that are subject to the AIS de minimis waiver should be highlighted. There should be a clear calculation available to indicate that the cost of the de minimis iron and steel items is 5% or less of the total cost of all materials.

Additional information, guidance and Questions and Answers about the State Revolving Fund American Iron and Steel (AIS) requirement can be found at EPA's website: <https://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement>

SECTION 4 GUIDANCE FOR APPLICABLE LABOR STANDARDS

I. Davis-Bacon Act

The Davis-Bacon Act requires Contractors and Subcontractors performing construction, alteration and repair work under Contracts in excess of \$2,000 funded from SRF monies, to pay their laborers and mechanics not less than the prevailing wage and fringe benefits for the geographic location.

For purposes of this section, "State Recipient" means EFC.

A. Requirements for Recipients.

This guidance describes how Recipients assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance under the Water Resources Reform and Development Act of 2014 (WRRDA) with respect to State Recipients and Recipients. Recipients with questions about when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring should contact the State Recipient. Recipients can also obtain guidance from DOL's web site at <http://www.dol.gov/whd/>

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements. Under the Water Resources Reform and Development Act of 2014 (WRRDA), DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund. If a Recipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the

Recipient must discuss the situation with the State Recipient before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Recipients must obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations must be incorporated into solicitations and any subsequent Contracts. Prime Contracts must contain a provision requiring that Subcontractors follow the wage determination incorporated into the prime Contract.

(i) While the solicitation remains open, the Recipient must monitor www.wdol.gov weekly to ensure that the wage determination contained in the solicitation remains current. Recipients must amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the Recipient may request a finding from the State Recipient that there is not a reasonable time to notify interested Contractors of the modification of the wage determination. The State Recipient will provide a report of its findings to the Recipient.

(ii) If the Recipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State Recipient, at the request of the Recipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The Recipient shall monitor www.wdol.gov on a weekly basis if it does not award the Contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the Recipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing Contractor (ordering instrument) rather than by publishing a solicitation, the Recipient must insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

(c) Recipients must review all Subcontracts subject to DB entered into by prime Contractors to verify that the prime Contractor has required its Subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a Recipient's Contract after the award of a Contract or the issuance of an ordering instrument if DOL determines that the Recipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the Contract or ordering instrument. If this occurs, the Recipient must either terminate the Contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the Contract or ordering instrument by change order. The Recipient's Contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

B. Additional requirements for Recipients that are not governmental entities

Recipients that are not governmental entities must submit their proposed DB wage determinations to the State Recipient for approval prior to including the wage determinations in any solicitation, Contract or issuing task orders, work assignments, or similar instruments to existing Contractors, as well as ordering instruments unless subsequently directed otherwise by the State Recipient award official as identified below.

Recipients must obtain proposed wage determinations for specific localities at www.wdol.gov. After the Recipient obtains its proposed wage determination, it must submit the wage determination to the State Recipient award official at: Timothy Burns, P.E., Director, Engineering and Program Management, New York State Environmental Facilities Corporation, at 518-402-7396 or at the following email address: Timothy.Burns@efc.ny.gov.

C. Compliance Verification

(a) The Recipient must periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that Contractors or Subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The Recipient must use Standard Form 1445 or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The Recipient must establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by Contractors or Subcontractors and the duration of the Contract or Subcontract. Recipients must increase the frequency of the interviews if the initial interviews or other information indicates that there is a risk that the Contractor or Subcontractor is not complying with DB. Recipients must immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews must be conducted in confidence.

(c) The Recipient must periodically conduct spot checks of a representative sample of weekly payroll data to verify that Contractors or Subcontractors are paying the appropriate wage rates. The Recipient must establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by Contractors or Subcontractors and the duration of the Contract or Subcontract. At a minimum, the Recipient must spot check payroll data within two weeks of each Contractor or Subcontractor's submission of its initial payroll data and two weeks prior to the completion date the Contract or Subcontract. Recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the Contractor or Subcontractor is not complying with DB. In addition, during the examinations the Recipient must verify evidence of fringe benefit plans and payments thereunder by Contractors and Subcontractors who claim credit for fringe benefit contributions.

(d) The Recipient must periodically review Contractors' and Subcontractors' use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that Contractors and Subcontractors are not using disproportionate numbers of laborers, trainees and apprentices. These reviews must be conducted in accordance with the schedules for spot checks and interviews described in Item (b) and (c) immediately above.

(e) Recipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at www.wdol.gov.

II. Applicable State and Local Labor Standards

Contractors and Subcontractors working under a public works contract subject to DBRA may also be subject to additional labor standards, including but not limited to prevailing wage requirements, under State and local laws. When preparing the bid for SRF project, the Contractor, and any Subcontractors, must use the higher of the prevailing federal, state, or applicable local wage rates paid to each trade.

III. Responsibilities of Contractors and Subcontractors

After execution of any SRF eligible Contracts, the Contractor and Subcontractor have the following responsibilities:

1. Post Davis Bacon Wage Poster and applicable federal, state, and local wages in a visible area at the construction site. This poster may be found on the EFC website under the Resource Library. (Refer to the attached required forms)
2. Make your employees available for wage interviews if necessary. Wage interviews must be conducted confidentially and using Labor Standard Interview Form (SF-1445). (Refer to the attached required forms)
3. Use federal payroll form WH-347 and complete the certifications on the back. If another form is being used, inform the Recipient and obtain a determination that the form is equivalent to the federal form. (Refer to the attached required forms)

4. Pay the higher of applicable prevailing federal, state, or local wages, including benefits (fringe & holidays), to each trade and overtime not less than one and one-half times the basic rate of pay for hours in excess of forty hours on Contracts in excess of \$100,000. The wage rates apply to Subcontractor trades as well.
5. Maintain proof of apprentice and trainee ratios for both Contractor and Subcontractor and certifications onsite.
6. Pay wages to your employees and your Subcontractors on a weekly basis. Ensure that your Subcontractors are paying their employees weekly.
7. Ensure that the Subcontracts contain the Davis Bacon contract language, the applicable federal, state, or local wage determinations and equal employment opportunity language. This language is provided in the Part 2: Required Contract Language. Federal wage determinations are available at www.wdol.gov.
8. Provide payroll forms and apprentice and trainee certifications to the Recipient for their records.
9. Report potential waste, fraud and abuse violations to the EPA Davis Bacon Contact and DOL Wages and Hours District Office found on their website. www.wdol.gov. Any violations in payroll reporting or unpaid wages are subject to a daily monetary penalty.

SECTION 5 GUIDANCE FOR REQUIREMENTS REGARDING SUSPENSION AND DEBARMENT

A list of debarred and suspended contractors, pursuant to 2 CFR Parts 180 and 1532 and 29 CFR § 5.12, is available on the US Department of Labor's website at <https://www.sam.gov/portal/public/SAM/>.

A list of contractors and subcontractors deemed ineligible to submit a bid on or be awarded a public contract or subcontract, pursuant to Article 8 of the State Labor Law, is available on the New York State Department of Labor's website at <http://labor.ny.gov/workerprotection/publicwork/PDFs/debarred.pdf>

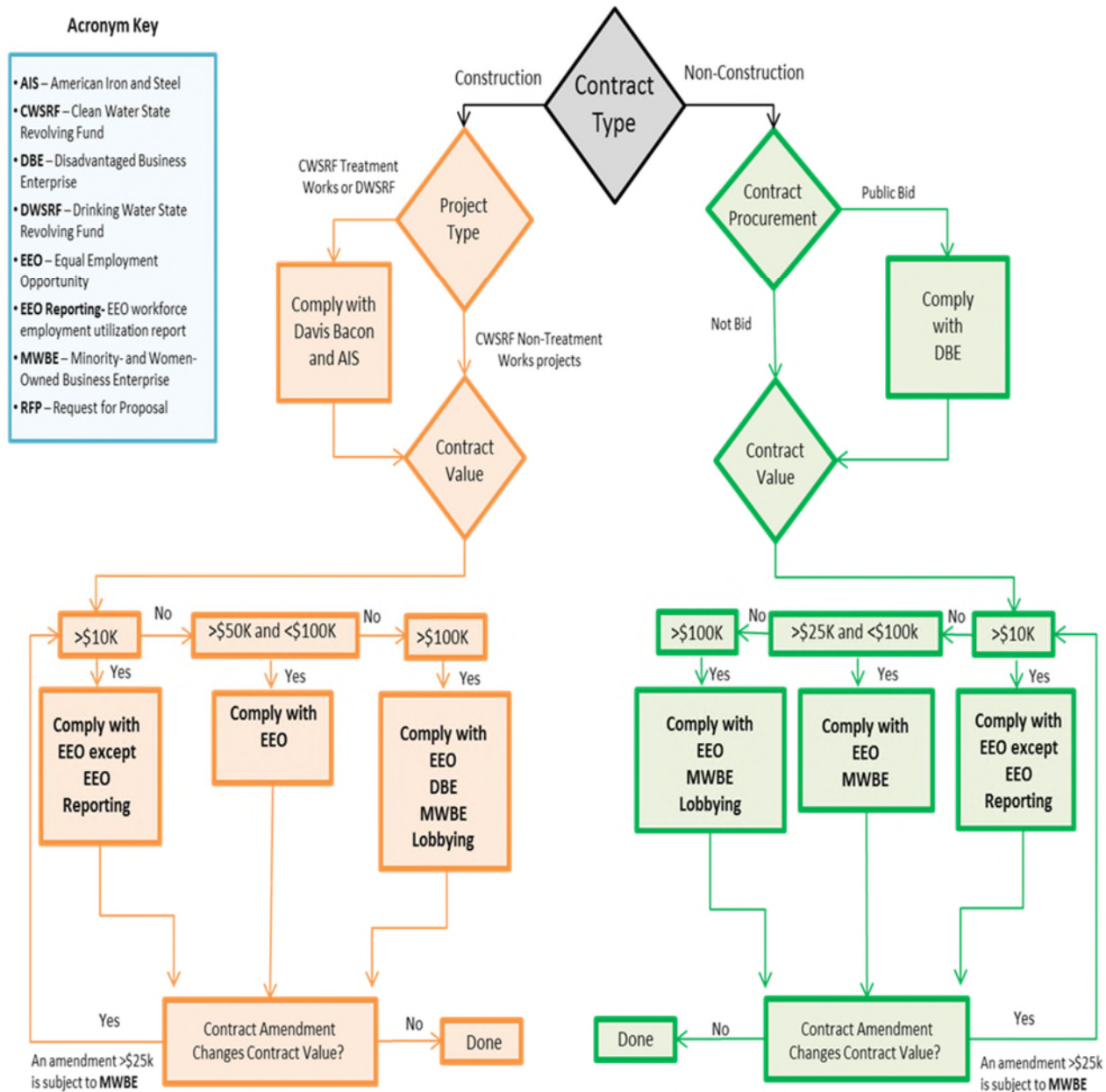
A list of contractors deemed ineligible to submit a bid is maintained by Empire State Development's Division of Minority and Women's Business Development.

SECTION 6 GUIDANCE FOR RESTRICTIONS ON LOBBYING

Each Contractor and any Subcontractor that has a Contract or Subcontract exceeding \$100,000 shall provide to the Recipient a completed Certification Regarding Lobbying pursuant to 40 CFR Part 34 ("Lobbying Certification") in the form attached hereto as Attachment 9 consistent with the prescribed form provided in Appendix A to 40 CFR Part 34. The form provides a certification that the Contractor or Subcontractor will not expend appropriated federal funds to pay any person for influencing or attempting to influence an officer or employee of any agency, Member of Congress, officer or employee of Congress or any employee of any Member of Congress in accordance with the provisions of 40 CFR Part 34, and to maintain such certification for their own records. It is noted that disbursement of funds may be withheld until the Lobbying Certification form has been received by the Recipient.

SECTION 7

PROGRAM CONTRACT REQUIREMENT DECISION TREE



SECTION 8 SUMMARY OF CONTRACTOR REQUIREMENTS FOR SRF-FUNDED PROJECTS

Forms can be found as attachments to this document or online at www.efc.ny.gov

Forms should be submitted electronically via email or through EFC's [dropbox](#)

To be submitted with this bid:

- ☐ EEO Policy Statement
- ☐ Documented Proof that EPA Form 6100-2 - DBE Subcontractor Participation Form was given to MWBE Subcontractors
- ☐ EPA Form 6100-3 - DBE Subcontractor Performance Form
- ☐ EPA Form 6100-4 - DBE Subcontractor Utilization Form
- ☐ Lobbying Certification
- ☐ AIS Contractor's Certification

Refer to Part 3

Guidance Section

Section 1

Section 1

Section 1

Section 1

Section 6

Section 3

To be submitted prior to or upon Contract award:

- ☐ Executed Contracts, Subcontracts, agreements, and purchase orders
- ☐ MWBE Utilization Plan and/or Waiver Request

Section 1

Tasks for construction start:

- ☐ Ensure that all Subcontracts contain Part 2: Required Contract Language
- ☐ Post EEO Poster
- ☐ Pay the higher of prevailing federal, state, or local wages including benefits
- ☐ Post Davis Bacon Wage Poster AND Wage Rates
- ☐ Use Federal Payroll Form (WH-347)
- ☐ Obtain apprentice and trainee certifications
- ☐ Obtain AIS Manufacturer's Certifications for all iron & steel products

Section 1

Section 4

Section 4

Section 4

Section 4

Section 3

Ongoing documentation & tasks:

- ☐ EEO Workforce Utilization Report
- ☐ Submit Monthly MWBE Reports to MBO
- ☐ Maintain weekly certified payrolls for all Prime & Subcontractors
- ☐ Maintain proof of payments for MWBE Subcontractors
- ☐ Maintain AIS Manufacturer's Certifications

Section 1

Section 1

Section 4

Section 1

Section 3

Attachment 1
New York State Environmental Facilities Corporation
EQUAL EMPLOYMENT OPPORTUNITY POLICY STATEMENT
NEW YORK STATE REVOLVING FUND (SRF)

I, _____, am the authorized representative of _____.
Name of Representative Name of Contractor/Service Provider
I hereby certify that _____ will abide by the equal employment
Name of Contractor/Service Provider
opportunity (EEO) policy statement provisions outlined below.

- (i) The Contractor will not discriminate on the basis of race, creed, color, national origin, sex, age, disability, or marital status against any employee or applicant for employment, will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination and will make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on Contracts relating to SRF projects.
- (ii) The Contractor shall state in all solicitations or advertisements for employees that, in the performance of the Contract relating to this SRF project, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.
- (iii) 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.
- (iv) The Contractor shall comply with the provisions of the Human Rights Law (Article 15 of the Executive Law), including those relating to non-discrimination on the basis of prior criminal conviction and prior arrest, and with all other State and federal statutory and constitutional non-discrimination provisions, including Titles VI and VII of the Civil Rights Act of 1964, 40 CFR Part 7, 41 CFR Part 60-1 Subpart A, 41 CFR Part 60-4, Section 504 of the Rehabilitation Act of 1973, and the Age Discrimination Act of 1975. The Contractor and Subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status.
- (v) The Contractor will include the provisions of subdivisions (i) through (iv) in every Subcontract in such a manner that the requirements of these subdivisions will be binding upon each Subcontractor as to work in connection with the Contract.

X

Contractor/Service Provider Representative

Attachment 2

Instructions for Completing and Submitting the Equal Employment Opportunity Workforce Utilization Report

The Equal Employment Opportunity (“EEO”) Workforce Utilization Report (“Report”) is used by contractors and subcontractors to report the actual workforce utilized in the performance of the contract broken down by job title for a particular reporting period. When the workforce utilized in the performance of the contract can be separated out from the contractor’s and/or subcontractor’s total workforce, the contractor and/or subcontractor shall submit a Report of the workforce utilized on the contract. When the workforce to be utilized on the contract cannot be separated out from the contractor’s and/or subcontractor’s total workforce, information on the contractor’s and/or subcontractor’s total workforce shall be included in the Report.

Instructions for Completing the Report

1. **Reporting Entity.** Check off the appropriate box to indicate if the entity completing the Report is the contractor or a subcontractor.
2. **Federal Employer Identification Number (“FEIN”).** Enter the FEIN assigned by the Internal Revenue Service (“IRS”) to the contractor or subcontractor for which the Report has been prepared. If the contractor or subcontractor uses a social security number instead of a FEIN, leave this field blank. The contractors and subcontractors for recipients of a grant only (such as an Engineering Planning Grant (EPG), a Water Infrastructure Improvement Act (WIIA) grant, or an Intermunicipal Grant Program (IMG) grant) do not need to fill out this section of the Report.
3. **Name.** Enter the name of the contractor or subcontractor for which the Report has been prepared.
4. **Address.** Enter the address of the contractor or subcontractor for which the Report has been prepared.
5. **Contract Number.** Enter the number of contract that the Report applies to, if applicable.
6. **Reporting Period / Month.** Check off the box that corresponds to the applicable quarterly or monthly (not both) reporting period for this Report. The Report is to be submitted on a monthly basis for construction contracts, and a quarterly basis based on the calendar quarter for all other contracts, during the life of the contract.
7. **Workforce Identified in Report.** Check off the appropriate box to indicate if the workforce being reported is just for the contract or the contractor’s or subcontractor’s total workforce.
8. **Preparer’s Name, Preparer’s Title, Date.** Enter the name and title for the person completing the Report, enter the date upon which the Report was completed, and check the box accepting the name entered into the Report as the digital signature of the preparer.
9. **Occupation Classifications (SOC Major Group) and SOC Job Title.** First, enter the applicable Occupation Classification (SOC Major Group) so a dropdown menu appears under SOC Job Title. Choose the SOC Job Title that best describes the worker.
10. **EEO Job Title and SOC Job Code.** The EEO Job Title and the SOC Job Code will automatically populate in the spreadsheet based upon the Occupation Classifications (SOC Major Group) and SOC Job Title selected. Please do not modify the information populated in these fields.

11. **Race/Ethnic Identification.** Race/ethnic designations do not denote scientific definitions of anthropological origins. For the purposes of this Report, an employee must be included in the group to which he or she appears to belong, identifies with, or is regarded in the community as belonging. However, no person should be counted in more than one race/ethnic group. The race/ethnic categories for this Report are:
- **WHITE** (not of Hispanic origin) all persons having origins in any of the original peoples of Europe, North Africa, or the Middle East.
 - **BLACK/AFRICAN AMERICAN** a person, not of Hispanic origin, who has origins in any of the black racial groups of the original peoples of Africa.
 - **HISPANIC/LATINO** a person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race.
 - **ASIAN, NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER** a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent or the Pacific Islands.
 - **NATIVE AMERICAN/ALASKAN NATIVE** a person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition.
12. **Number of Employees and Number of Hours.** Enter the number of employees and the total number of hours worked by such employees for each SOC Job Title under the columns corresponding to the gender and racial/ethnic groups with which the employees most closely identify.
13. **Total Compensation.** Enter the total compensation paid to all employees for each SOC Job Title, each gender, and each racial/ethnic group. Contractors and subcontractors should report only compensation for work on the contract paid to employees during the period covered by the Report. Compensation should include only sums which must be reported in Box 1 of IRS Form W-2. The contractors and subcontractors for recipients of a grant only (such as an EPG, a WIIA, or an IMG grant) do not need to fill out this section of the Report.
14. **For EFC Use Only.** This section is for EFC use only and does not need to be filled out by the contractor/subcontractor.

Instructions for Submitting the Report

The Report is to be submitted on a monthly basis for construction contracts, and a quarterly basis based on the calendar quarter for all other contracts, during the life of the contract.

EFC will provide a Report form in Excel format to the Recipient's Minority Business Officer ("MBO"). The Recipient's MBO is responsible for providing the Report form to all contractors. Each contractor is responsible for providing the Report form to all subcontractors.

Reports are to be submitted electronically in Excel format, using the Report form provided, within ten (10) days of the end of each month or quarter, whichever is applicable. For example, the January monthly Report for a construction contract is due by February 10th and the January – March quarterly Report for a non-construction contract is due by April 10th.

Once the Report form has been completed, each contractor/subcontractor must submit the Report form to EFC and the Recipient's MBO. The Report form must be submitted to EFC according to the following instructions:

1. Go to www.efc.ny.gov/eeoreporting.
2. Enter the requested information pursuant to the instructions on the page. Make sure to choose the correct applicable funding program (Clean Water State Revolving Fund (SRF), Drinking Water SRF, non-SRF Grant Only (e.g. EPG, WIIA, IMG)) and the correct reporting period (reporting

quarter for non-construction OR reporting month for construction). Enter the reporting period of the data, not the date it's submitted.

3. Submit your Report(s) pursuant to the instructions on the page.
4. If you are a contractor, use the naming convention provided by EFC (in the "For EFC Use Only" section of the Report form) for naming the file for upload (i.e., Funding Program – Project Number– Contractor short name (up to fifteen characters) – MWBE ID). The funding programs include CW (clean water SRF), DW (drinking water SRF), and GO (non-SRF grant only). If you are a subcontractor, use the naming convention provided by EFC and replace the contractor's short name with the first fifteen characters of the subcontractor's name, omitting any spaces or special characters.

Questions

If you have questions about or require assistance completing or submitting the Report, please contact EFC at mwbe@efc.ny.gov or 518-402-6924.

Reporting Entity	<input type="checkbox"/> Contractor	<input type="checkbox"/> Subcontractor
FEIN		
Contractor Name		
Contractor Address		
Contract Number		

Preparer's Name: _____

Preparer's Title: _____

Date: _____

☐ By checking this box, I certify that I personally completed this document and I adopt the name typed above as my electronic signature under the NYS Electronic Signatures and Records Act, with like legal force and effect as if I had physically signed the document.

SAMPLE

For EFC Use Only		Municipality:		MWBE ID:		Contract ID:		Contract Amount:	
	Applicant:			Project No.:		Registration No.:		MWBE Eligible Contract Amount:	
	Prime Contractor/Service Provider:			GIGP/EPG No.:		CFA No.:		EFC Representative:	
	Program:		County:		Contractor Short Name:			Date Generated:	

Attachment 3
New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
("Monthly MWBE Report")

Instructions:

- Contractors are to complete the report in Word version and email to the Recipient's Minority Business Officer ("MBO") on a monthly basis.
- If you require additional pages, you may find them on EFC's website at www.efc.ny.gov.
- All** MWBE Subcontractors for this contract **MUST** be listed on the form regardless of whether they were paid this month.
- Please save Report as "*MReport – (Project No). – (Municipality) – (Firm Name) – (Date)*" and send the Word version of this document.
- Proofs of payment in the amounts shown below must be transmitted to the MBO with the report.

Municipality:		County:		Contract ID:		Month:	Year:
Project No.:		GIGP/EPG No:		Registration No. (NYC only):			
Prime Contractor/Service Provider:				Award Date:		Start Date:	
Date all MWBE subs paid in full:							
Signature of Contractor: <input type="checkbox"/> I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief. Date:							
Last Month's Contract Amt: \$ Revised Contract Amt: \$		MWBE Eligible Amt: \$ (Goals are applied to this amount and includes eligible change orders, amendments & waivers)		EFC MWBE Goals MBE: % MBE Amt: \$ WBE: % WBE Amt: \$ Total: % Total Amt: \$		Total Paid to Prime Total Paid this Month: \$ Total Paid to Date: \$	
NYS Certified MWBE Contractor & Subcontractor		Please Specify Any Revisions this Month.		Subcontractor Total Amount		Payments this Month	Previous Payments
				Original	Revised		
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A		<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A		<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A		<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					

Attachment 3
New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
(“Monthly MWBE Report”)

NYS Certified MWBE Contractor & Subcontractor	Please Specify Any Revisions this Month.	Subcontractor Contract Amount		Payments this Month	Previous Payments	Total Payments Made to Date
		Original	Revised			
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					

Attachment 3
New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
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NYS Certified MWBE Contractor & Subcontractor	Please Specify Any Revisions this Month.	Subcontractor Total Amount		Payments this Month	Previous Payments	Total Payments Made to Date
		Original	Revised			
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					

Attachment 3
New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
("Monthly MWBE Report")

Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: <u>Select Only One:</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other: <u>Select Only One:</u> <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	<input type="checkbox"/> Subcontractor is REMOVED <input type="checkbox"/> NEW Subcontractor <input type="checkbox"/> Subcontract Amt. INCREASED <input type="checkbox"/> Subcontract Amt. DECREASED					
Additional Pages can be found at www.efc.ny.gov TOTAL						
Please explain any revisions and note the scope of work that new subcontractors will be providing. Please note that change orders over \$25K may require that good faith efforts be made to obtain additional MWBE participation: 						

Attachment 4
NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan

Instructions for Contractors & Service Providers:

Contractors and Service Providers must complete Sections 2 and 3. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format to the Recipient's designated Minority Business Officer (MBO) no later than the date of contract execution.** Incomplete forms will be found deficient. If more than 10 subcontractors are used, additional pages for Section 3 can be found on EFC's website.

If the prime contract is being performed by the parties to a Joint Venture, Teaming Agreement, or Mentor-Protégé Agreement that includes a certified MWBE, please contact EFC for assistance.

MWBE firms must be certified by the NYS Empire State Development Corporation (ESD) in order to be counted towards satisfaction of MWBE participation goals. The utilization of certified MWBEs for non-commercially useful functions may not be counted towards utilization of certified MWBEs in the Utilization Plan. Please note whether a firm is serving as a broker or supplier on the contract. A broker is denoted by NAICS code 425120 and is designated as a broker in ESD's MWBE Directory. A supplier is denoted by a NAICS code beginning with 423 or 424, or a NIGP code that does not begin with the number 9, and is designated as a supplier in ESD's MWBE Directory. If a firm is serving as a broker, please additionally provide the percentage of the broker's commission on the contract.

See the Bid Packet at www.efc.ny.gov or consult your designated MBO for further guidance.

Instructions for Minority Business Officers (MBO):

The MBO must complete Section 1. The MBO may designate an Authorized Representative to complete and submit quarterly payment reports on its behalf, and, if so designated, the MBO's Authorized Representative must also complete Section 1. The Authorized Representative may only submit quarterly payment reports on behalf of the MBO and may not submit any other required forms or reports for the MBO. The MBO must complete Section 1 even if designating an Authorized Representative. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format via e-mail to your EFC MWBE Representative.**

The subject heading of the e-mail to the EFC MWBE Representative should follow the format "UP, Project Number, Contractor." EFC will review the Utilization Plan and notify the MBO via e-mail of its acceptance or denial.

Within 10 days of EFC's acceptance of a Utilization Plan, EFC will post the approved Utilization Plan on the EFC website.

Attachment 4
NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan

SECTION 1: MUNICIPAL INFORMATION				
Recipient/Municipality:			County:	
Project No.:	GIGP/EPG No.:	Contract ID:	Registration No. (NYC only):	
Minority Business Officer:		Email:	Phone #:	
Address of MBO:				
Electronic Signature of MBO: <input type="checkbox"/> I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.				Date:
Complete if applicable:				
Authorized Representative:		Title:		
Authorized Rep. Company:		Email:	Phone #:	
Electronic Signature of Authorized Rep.: <input type="checkbox"/> I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.				Date:

SECTION 2: PRIME CONTRACTOR / SERVICE PROVIDER INFORMATION				
Firm Name:			Contract Type: <input type="checkbox"/> Construction <input type="checkbox"/> Other Services	
Prime Firm is Certified as: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> N/A <input type="checkbox"/> Other: Please repeat information in the Utilization Plan below (Section 3). If dual certified, you must select either MBE <u>or</u> WBE.				
Address:		Phone #:	Fed. Employer ID #:	
Description of Work:				
Award Date:	Start Date:	Completion Date:	MWBE GOAL Total	PROPOSED MWBE Participation
Total Contract Amount: \$ MWBE Eligible Contract Amount: \$ (MWBE Goals are applied to this amount and includes all change orders, amendments, & waivers)			MBE: % \$	MBE: % \$
			WBE: % \$	WBE: % \$
			Total: % \$	Total: % \$

Attachment 4
NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan

SECTION 3: M/WBE SUBCONTRACTOR INFORMATION				
This Submittal is:	<input type="checkbox"/> The First/Original Utilization Plan <input type="checkbox"/> Revised Utilization Plan #:			
NYS Certified M/WBE Subcontractor Info		Contract Amount:		For EFC Use:
		MBE (\$)	WBE (\$)	
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other:	Start Date:			
Select Only One: <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other:	Start Date:			
Select Only One: <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other:	Start Date:			
Select Only One: <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other:	Start Date:			
Select Only One: <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	Completion Date:			
Full Contract Amount: \$				

Attachment 4
NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan

SECTION 3: M/WBE SUBCONTRACTOR INFORMATION continued				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other:	Start Date:			
Select Only One: <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other:	Start Date:			
Select Only One: <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other:	Start Date:			
Select Only One: <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	Completion Date:			
Full Contract Amount: \$				
Name:	Fed. Employer ID#:			
Address:	Phone #:			
Scope of Work:	Email:			
Select Only One: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Other:	Start Date:			
Select Only One: <input type="checkbox"/> Broker ___% <input type="checkbox"/> Supplier <input type="checkbox"/> N/A	Completion Date:			
Full Contract Amount: \$				
SIGNATURE				
Electronic Signature of Contractor: <input type="checkbox"/> I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and that all MWBE subcontractors will perform a commercially useful function. Name (Please Type):				Date:

Attachment 5
New York State Environmental Facilities Corporation
Minority & Women Owned Business Enterprise (MWBE) Waiver Request Form

Instructions for Contractors & Service Providers:

Contractors and Service Providers must complete Sections 2, 3, and 4. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format to the Recipient's designated Minority Business Officer (MBO).** Incomplete forms will be found deficient.

See the Bid Packet at www.efc.ny.gov or consult your designated MBO for further guidance.

Instructions for Minority Business Officers (MBO):

The MBO must complete Section 1. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format via e-mail to your EFC MWBE Representative.** The subject heading of the e-mail to the EFC MWBE Representative should follow the format "Waiver Request, Project Number, Contractor." EFC will review and notify the MBO via e-mail of its acceptance or denial.

If a partial MWBE waiver is requested, an MWBE Utilization Plan must also be submitted for the amount of proposed MWBE participation.

SECTION 1: MUNICIPAL INFORMATION				
Recipient/Municipality:			County:	
Project No.:	GIGP/EPG No.:	Contract ID:	Registration No. (NYC only):	
Minority Business Officer (MBO):		Email:	Phone #:	
Address of MBO:				
Signature of MBO: <input type="checkbox"/> I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.				Date:

SECTION 2: PRIME CONTRACTOR / SERVICE PROVIDER INFORMATION				
Firm Name:			Contract Type: <input type="checkbox"/> Construction <input type="checkbox"/> Other Services	
Prime Firm is Certified as: <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> N/A <input type="checkbox"/> Other:				
Address:		Phone #:	Fed. Employer ID #:	
Contact Information of Firm Representative Authorized to Discuss Waiver Request:				
Name:		Title:	Phone #:	E-mail:
Description of Work:			EFC MWBE GOAL Total	
Award Date:	Start Date:	Completion Date:	MBE: % \$	
Total Contract Amount: \$ MWBE Eligible Contract Amount: \$ (MWBE Goals are applied to this amount and includes all change orders, amendments, & waivers)			WBE: % \$	
			Total: % \$	

Attachment 5
New York State Environmental Facilities Corporation
Minority & Women Owned Business Enterprise (MWBE) Waiver Request Form

SECTION 3: TYPE OF MWBE WAIVER REQUESTED

1. ☐ **Full Waiver** (No MWBE participation)
2. ☐ **Partial Waiver** (Less than the MWBE goals; indicate below the proposed MWBE participation)

PROPOSED MWBE Participation

MBE: % \$

WBE: % \$

Total: % \$

3. ☐ **Specialty Equipment/Services Waiver** (Must be of SIGNIFICANT cost - list of equipment and cost must be attached in addition to the supporting documentation outlined below)

SECTION 4: SUPPORTING DOCUMENTATION

To be considered, the Request for Waiver Form must be accompanied by the documentation requested in items 1 – 9, as listed below. If a Specialty Equipment Waiver is requested, it must be accompanied by the documentation requested in items 1 - 13. If a Specialty Services Waiver is requested, it must be accompanied by the items requested in items 1 – 9 and item 14. Copies of the following information and all relevant supporting documentation must be submitted along with the request. Please contact EFC for assistance, including sample documentation.

1. A letter of explanation setting forth your basis for requesting a partial or total waiver and detailing the good faith efforts that were made.
2. Copies of advertisements in any general circulation, trade association, and minority- and women-oriented publications in which you solicited MWBEs for the purposes of complying with your participation goals, with the dates of publication.
3. Screenshots of search results (by business description or commodity code) from Empire State Development Corporation's (ESD) MWBE Directory of all certified MWBEs that were solicited for purposes of complying with your MWBE participation goals.
4. Copies of faxes, letters, or e-mails sent to MWBE firms to solicit participation and their responses.
5. A log of solicitation results, consisting of the list of MWBE firms solicited for the contract and the outcome of the solicitations. The log should be broken out into separate areas for each task that is solicited (e.g., trucking, materials, electricians) and clearly provide a rationale for firms included on the completed Utilization Plan as well as for those not chosen. The log should show: that each MWBE firm was contacted twice by two different methods (e.g., fax and phone); who was spoken to; what was said; and the final outcome of the solicitation.
6. A description of any contract documents, plans, or specifications made available to MWBEs for purposes of soliciting their bids and the date and manner in which these documents were made available. Specifically, include information on the scope of work in the contract and a breakout of tasks or equipment, such as

Attachment 5
New York State Environmental Facilities Corporation
Minority & Women Owned Business Enterprise (MWBE) Waiver Request Form

a schedule of values for a construction contract or a proposal or excerpt from a professional services agreement.

7. Documentation of any negotiations between you, the Contractor, and the MWBEs undertaken for purposes of complying with your MWBE participation goals.
8. Any other information you deem relevant which may help us in evaluating your request for a waiver. Examples may include sign-in sheets from any pre-bid meetings where MWBE firms were invited, attendance at MWBE forums, etc.
9. EFC and the MBO reserve the right to request additional information and/or documentation.

Additional Documentation for Requests for Specialty Equipment Waivers:

10. Copies of the appropriate pages of the technical specification related to the equipment showing the choices for manufacturers or other information that limits the choice of vendor.
11. Letter, e-mail or screenshot of website from the manufacturer listing their distributors in NYS and the locations.
12. Screenshots of ESD's MWBE Directory searches for the manufacturer and distributor showing that they are not found in the Directory.
13. An invoice or purchase order showing the value of the equipment.

Additional Documentation for Requests for Specialty Service Waivers:

14. A letter of explanation containing information about the scope of work and why no MWBE firms could be subcontracted to provide that service.

Note: Unless a Total Waiver has been granted, Firms will be required to submit all reports and documents pursuant to the provisions set forth in the procurement and/or contract, as deemed appropriate by EFC, to determine MWBE compliance. In cases where EFC accepts a full or partial waiver of MWBE participation goals, the waiver request will be posted to EFC's website.

SIGNATURE

Electronic Signature of Contractor:

☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge.

Name: (Please Type):

Date:

Attachment 6
United States Environmental Protection Agency
Form 6100-2
DBE Subcontractor Participation Form

Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Participation Form

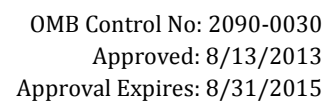
An EPA Financial Assistance Agreement Recipient must require its prime contractors to provide this form to its DBE subcontractors. This form gives a DBE¹ subcontractor² the opportunity to describe work received and/or report any concerns regarding the EPA-funded project (e.g., in areas such as termination by prime contractor, late payments, etc.). The DBE subcontractor can, as an option, complete and submit this form to the EPA DBE Coordinator at any time during the project period of performance.

Subcontractor Name		Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact	
Address			
Telephone No.		Email Address	
Prime Contractor Name		Issuing/Funding Entity:	

Contract Item Number	Description of Work Received from the Prime Contractor Involving Construction, Services , Equipment or Supplies	Amount Received by Prime Contractor

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



Please use the space below to report any concerns regarding the above EPA-funded project:

[illegible]

Subcontractor Signature	Print Name
Title	Date

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Attachment 7
United States Environmental Protection Agency
Form 6100-3
DBE Subcontractor Performance Form

Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Performance Form

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name		Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact	
Address			
Telephone No.		Email Address	
Prime Contractor Name		Issuing/Funding Entity:	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services , Equipment or Supplies	Price of Work Submitted to the Prime Contractor
DBE Certified By: <input type="checkbox"/> DOT <input type="checkbox"/> SBA <input type="checkbox"/> Other: _____		Meets/ exceeds EPA certification standards? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Unknown

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

Subcontractor Signature	Print Name
Title	Date

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Attachment 8
United States Environmental Protection Agency
Form 6100-4
DBE Subcontractor Utilization Form

Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Utilization Form

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name		Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact	
Address			
Telephone No.		Email Address	
Issuing/Funding Entity:			

I have identified potential DBE certified subcontractors	___ YES	___ NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est. Dollar Amt	Currently DBE Certified?

Continue on back if needed

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Attachment 9
New York State Environmental Facilities Corporation
CERTIFICATION REGARDING LOBBYING
FOR
CONTRACTS, GRANTS, LOANS, AND
COOPERATIVE AGREEMENTS
40 CFR Part 34

SRF Project No.: _____

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

By: _____
Name: _____
Title: _____
Date: _____
Contract ID: _____

Attachment 10
New York State Environmental Facilities Corporation
Contractor's American Iron and Steel (AIS) Certifications

To be completed by prime contractors for all construction contracts

AIS CONTRACTOR CERTIFICATION
FOR CONSTRUCTION CONTRACTS PAID FOR WITH FUNDS FROM
THE NYS CLEAN WATER STATE REVOLVING FUND OR
THE NYS DRINKING WATER STATE REVOLVING FUND VIA THE
NYS ENVIRONMENTAL FACILITIES CORPORATION

Project Title: _____

Contractor's Name: _____

Contract ID: _____

SRF Project #: _____

SRF Recipient Name: _____

I certify that the iron and steel products that will be permanently incorporated into the public water system or wastewater treatment works project under this construction contract will have been produced in the United States, in accordance with the requirements of the US Environmental Protection Agency. I will also develop and maintain at the project location the necessary documentation to demonstrate that the iron and steel products incorporated into the project were produced in the United States, and make such documentation available to The NYS Environmental Facilities Corporation or their authorized representatives, upon request.

Signature: _____

Name (print): _____

Title: _____

Date: _____

Attachment 11
New York State Environmental Facilities Corporation
Manufacturer's American Iron and Steel (AIS) Certifications

1. The following information is provided as a manufacturer's sample letter of **step** certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxx

2. Xxx

3. Xxx

Such process took place at the following location: _____

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

[Signed by company representative]

Attachment 11
New York State Environmental Facilities Corporation
Manufacturer's American Iron and Steel (AIS) Certifications

2. The following information is provided as a manufacturer's sample letter of certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxx

2. Xxx

3. Xxx

Such process took place at the following location: _____

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

[Signed by company representative]

Attachment 12
United States Department of Labor
Wage and Hour Division
Form WH-347
Federal Payroll Form

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.



Rev. Dec. 2008

NAME OF CONTRACTOR		OR SUBCONTRACTOR		ADDRESS		OMB No.: 1235-0008 Expires: 02/28/2018	
--------------------	--	------------------	--	---------	--	---	--

PAYROLL NO.		FOR WEEK ENDING		PROJECT AND LOCATION		PROJECT OR CONTRACT NO.	
-------------	--	-----------------	--	----------------------	--	-------------------------	--

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT OR ST.	(4) DAY AND DATE							(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS						(9) NET WAGES PAID FOR WEEK			
				HOURS WORKED EACH DAY																			
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

Date _____

I, _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by _____ on the _____
(Contractor or Subcontractor)
_____ ; that during the payroll period commencing on the _____
(Building or Work)
_____ day of _____, _____, and ending the _____ day of _____, _____,
all persons employed on said project have been paid the full weekly wages earned, that no rebates have
been or will be made either directly or indirectly to or on behalf of said
_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly
from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part
3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948,
63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are
correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the
applicable wage rates contained in any wage determination incorporated into the contract; that the classifications
set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship
program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and
Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered
with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:
(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

- in addition to the basic hourly wage rates paid to each laborer or mechanic listed in
the above referenced payroll, payments of fringe benefits as listed in the contract
have been or will be made to appropriate programs for the benefit of such employees,
except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

- Each laborer or mechanic listed in the above referenced payroll has been paid,
as indicated on the payroll, an amount not less than the sum of the applicable
basic hourly wage rate plus the amount of the required fringe benefits as listed
in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR
SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE
31 OF THE UNITED STATES CODE.

PERFORMANCE BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

Town of Essex
PO Box 355
2313 Main Street
Essex, New York 12936

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

(seal)

Contractor's Name and Corporate Seal

By: _____
Signature

Print Name

Title

Attest: _____
Signature

Title

(seal)

Surety's Name and Corporate Seal

By: _____
Signature *(attach power of attorney)*

Print Name

Title

Attest: _____
Signature

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and 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 when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, 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;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. 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:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence,

to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven 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 Paragraph 5.4, and the Owner refuses the payment 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.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, 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. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 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 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. 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, successors, and assigns.

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. 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 a declaration of 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 law, the minimum periods of limitations 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 page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 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 for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims

for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

PAYMENT BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*: Town of Essex, PO Box 355, 2313 Main Street, Essex, New York 12936

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

(seal)

Contractor's Name and Corporate Seal

By: _____
Signature

Print Name

Title

Attest: _____
Signature

Title

(seal)

Surety's Name and Corporate Seal

By: _____
Signature *(attach power of attorney)*

Print Name

Title

Attest: _____
Signature

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and 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, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts 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 Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. 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 the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. 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.

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, 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.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and

8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having 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 Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, 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.

16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

NOTICE TO PROCEED

Owner:	Town of Essex 2313 Main Street Essex, New York 12936	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:		Engineer's Project No.:	17-011
Project:		Contract Name:	
		Effective Date of Contract:	

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, 20__]. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, [the date of Substantial Completion is _____, and the date of readiness for final payment is _____] *or* [the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____].

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer



EJCDC® C-620 Contractor's Application for Payment
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Progress Estimate - Lump Sum Work

Contractor's Application

For (Contract):					Application Number:			
Application Period:					Application Date:			
		B	Work Completed		E	F		G
A		B	C	D	Materials Presently Stored (not in C or D)	Total Completed and Stored to Date (C + D + E)	% (F / B)	Balance to Finish (B - F)
Specification Section No.	Description	Scheduled Value (\$)	From Previous Application (C+D)	This Period				
	Totals							

Progress Estimate - Unit Price Work

Contractor's Application

[illegible]

Stored Material Summary

Contractor's Application

[illegible]

Change Order No. _____

Date of Issuance:

Effective Date:

Owner: Town of Essex, NY

Owner's Contract No.:

Contractor:

Contractor's Project No.:

Engineer: Cedarwood Engineering Services, PLLC

Engineer's Project No.:

Project: Water Treatment Plant Upgrade

Contract Name:

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i>
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ____ to No. ____: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. ____ to No. ____: Substantial Completion: _____ Ready for Final Payment: _____ days
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (if required)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable)

By: _____ Date: _____
Title: _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: Town of Essex, NY	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: Cedarwood Engineering Services, PLLC	Engineer's Project No.: 17-011
Project: Water Treatment Plant Upgrade	Contract Name:

This [preliminary] [final] Certificate of Substantial Completion applies to:

☐ All Work ☐ The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities: ☐ None
☐ As follows

Amendments to Contractor's responsibilities: ☐ None
☐ As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract.

EXECUTED BY ENGINEER:	RECEIVED:	RECEIVED:
By: _____ (Authorized signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT TE-2020-G and TE-2020-E

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document 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, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance

with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.

47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
 1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the 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 is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
 1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
 1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. 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 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
 1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or

some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
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;
 2. a preliminary Schedule of Submittals; and
 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, 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 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 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 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. 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.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be

effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. 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 had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any 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).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract

Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. 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 its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract 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 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

- A. 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 property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument 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 or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. 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, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. abnormal weather conditions;
 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

- A. *Limitation on Use of Site and Other Areas:*
 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for

Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all 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) arising out of or relating to 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 directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* 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 structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with

respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

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
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
2. is of such a nature as to require a change in the Drawings or Specifications; or
3. differs materially from that shown or indicated in the Contract Documents; or
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 the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in

question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Possible Price and Times Adjustments:*

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. 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 Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, 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 required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. 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 Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 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
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly 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 condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such 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 the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors 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) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2)

was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors 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) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving

rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.

- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, 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.

- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
 - 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
 - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 - 2. claims for damages insured by reasonably available personal injury liability coverage.
 - 3. 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.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
 - 1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against 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 automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after

Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

- I. *General provisions:* The policies of insurance required by this Paragraph 6.03 shall:
 - 1. include at least the specific coverages provided in this Article.
 - 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 - 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 - 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 - 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, 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.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable 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:
 - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the

remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as “insureds.”

2. be written on a builder’s risk “all risk” policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder’s risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
6. extend to cover damage or loss to insured property while in transit.
7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.
8. allow for the waiver of the insurer’s subrogation rights, as set forth below.
9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
10. not include a co-insurance clause.
11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
12. include performance/hot testing and start-up.

13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change*: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles*: The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk 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 insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, 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 or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 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 perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR’S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

- A. 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.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. 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 stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner’s written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, 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 performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required 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 source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 "Or Equals"

- A. 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 Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
1. If Engineer in its sole discretion determines that 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, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item 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 other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in

Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. 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.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. 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.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors 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) arising out of or relating to 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 specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors 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) arising out of or relating to 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.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, 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 the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *Taxes*

- A. 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.

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the 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.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors 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) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
 - C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
 - D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
 - E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer 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 individual or entity directly or indirectly employed by any of them).
 - F. Contractor's duties and responsibilities for safety and protection 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 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
 - G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

- A. 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.

7.14 *Hazard Communication Programs*

- A. 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.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor 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 or are required as a result thereof. 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.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
 2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
 3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.
2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, 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.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
 1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. 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.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
 5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures:*

1. 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.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. 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:
 1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal;
 6. the issuance of a notice of acceptability by Engineer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors 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) arising out of or relating to the performance of the Work, provided that 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 but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A 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 individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other

work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, 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 to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner for whom the Owner is responsible causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such

adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all 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) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. 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 performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

10.01 *Owner’s Representative*

- A. 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.

10.02 *Visits to Site*

- A. 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, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site 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 observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer’s 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 performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. 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 individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer’s authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.

- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, 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 in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. 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 performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A 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.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
 - 3. *Field Orders:* Engineer may authorize minor changes in the Work if the changes 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. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract 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

changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

- A. 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, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
 - 1. a mutually acceptable fixed fee; or
 - 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:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;

- c. 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 11.04.C.2.a and 11.04.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
- d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
- e. 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
- f. 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 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
 - 1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety 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), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*:
1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any

time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

- G. *Final and Binding Results:* If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 Cost of the Work

- A. *Purposes for Determination of Cost of the Work:* The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
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 on the Work. 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, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 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.

3. Payments made by Contractor to Subcontractors for Work performed 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 acceptable. 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 this Paragraph 13.01.
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.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. 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.
 - c. 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, assembly, dismantling, and removal thereof. All such costs shall be 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.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. 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.
 - f. 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 of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages 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.
 - g. The cost of utilities, fuel, and sanitary facilities at the Site.

- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:
 - 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
 - 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 - 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.
 - 4. 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.
 - 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.
- E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

- A. 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 performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:* Contractor agrees that:
 - 1. the cash 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

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash 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.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. 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.

13.03 *Unit Price Work*

- A. 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 unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. 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. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. 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.
- D. 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 (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 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;
 2. there is no corresponding adjustment with respect to any other item of Work; and
 3. Contractor believes that it 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 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the

Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 Tests, Inspections, and Approvals

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. 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.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. 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, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). 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), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then 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, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to 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 pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered 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 both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then 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, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

- A. 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, 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, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or 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, 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 representatives, 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.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-

offs against payments due under Article 15. 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.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 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 during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
1. At least 20 days before the date established in the Agreement 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, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, 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.
 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's 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:

- a. the Work has progressed to the point indicated;
 - b. 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, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. 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.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. 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.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. 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 stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;

- c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
- d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
- e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

- 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner:*

- 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. 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;

- I. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. 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 and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, 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 therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which 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, subject to the following conditions:
 - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. 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 therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 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.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly 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, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, 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, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance:*

1. 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 have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. 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 15.07. Otherwise, Engineer will return the Application for Payment 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 for Payment.

- C. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed 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, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay 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) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

- C. 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.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, 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.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure 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);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.

- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, 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 complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds 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. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. 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, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. 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;
 - 2. 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; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 Contractor May Stop Work or Terminate

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 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 contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 Methods and Procedures

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract 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.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto 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. 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.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall 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.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC-1.01 Defined Terms

SC 1.01.A.8 Add the following language at the end of last sentence of Paragraph 1.01.A.8:

The Change Order form to be used on this Project is EJCDC C-941. Agency approval is required before Change Orders are effective.

SC 1.01.A.48 Add the following language at the end of the last sentence of Paragraph 1.01.A.48:

A Work Change Directive cannot change Contract Price or Contract Times without a subsequent Change Order.

SC 1.01.A.49 Add the following new Paragraph after Paragraph 1.01.A.48:

Abnormal Weather Conditions – Conditions of extreme or unusual weather for a given region, elevation, or season as determined by Engineer. Extreme or unusual weather that is typical for a given region, elevation, or season should not be considered Abnormal Weather Conditions.

SC 1.01.A.50 Add the following new Paragraph after Paragraph 1.01.A.49:

Agency – The Project is financed in whole or in part by the New York State Environmental Facilities Corporation (EFC) Drinking Water State Revolving Fund (DWSRF) loan therefore, the Agency for these documents is the EFC.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.01 Delivery of Bonds and Evidence of Insurance

SC-2.01 Delete Paragraphs 2.01 B. and C. in their entirety and insert the following in their place:

B. Evidence of Contractor's Insurance: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies of insurance (including all endorsements, and identification of applicable self-insured retentions and deductibles) required to be provided by Contractor in Article 6. Contractor may block out (redact) any confidential

premium or pricing information contained in any policy or endorsement furnished under this provision.

- C. Evidence of Owner's Insurance: After receipt from Contractor of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner under Article 6 (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

SC-2.02 Copies of Documents

SC-2.02.A. Amend the first sentence of Paragraph 2.02.A. to read as follows:

Owner shall furnish to Contractor [two] copies of the Contract Documents (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF).

~~SC 2.06.B (Non-mandatory) Guidance Note: If the parties do not intend to develop electronic or digital transmittal protocols, then Paragraph 2.06B of the General Conditions may be deleted. Use the following Supplementary Condition in such case:~~

~~SC 2.06.B Delete Paragraph 2.06B and replace it with the term [Deleted].~~

~~SC 2.06.B Add the following language to the end of 2.06.B:~~

~~Special requirements for electronic data apply to this Project. See attached Exhibit entitled "Electronic Communications Protocol Addendum," Consensus DOCS form 200.2.~~

SC 4.01.A Amend the last sentence of Paragraph 4.01.A by striking out the following words:

In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

SC 4.05.C.2 Amend Paragraph 4.05.C.2 by striking out the following text: "abnormal weather conditions;" and inserting the following text:

Abnormal Weather Conditions;

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03 Subsurface and Physical Conditions

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.B:

- C. The following reports of explorations and tests of subsurface conditions at or adjacent to the Site are known to Owner:
 - 1. None
- D. The following drawings of physical conditions relating to existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities) are known to Owner:

- a. None of the contents of such drawings is Technical Data on whose accuracy Contractor may rely.

~~E. Contractor may examine copies of reports and drawings identified in SC 5.03.C and SC 5.03.D that were not included with the Bidding Documents at _____ [insert location] during regular business hours, or may request copies from Engineer.~~

SC-5.06 Hazardous Environmental Conditions

SC 5.06 Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.
- B. Not Used.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.02 Insurance—General Provisions

SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

SC-6.03 Contractor's Liability Insurance

SC 6.03 Add the following new paragraph immediately after Paragraph 6.03.J:

K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman's):	<u>Statutory</u>
Jones Act coverage, if applicable:	
Bodily injury by accident, each accident	\$ <u>N/A</u>
Bodily injury by disease, aggregate	\$ <u>N/A</u>

Employer's Liability:

Bodily injury, each accident	\$ <u>1,000,000</u>
Bodily injury by disease, each employee	\$ <u>1,000,000</u>
Bodily injury/disease aggregate	\$ <u>1,000,000</u>

For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of: \$ N/A

Foreign voluntary worker compensation Statutory

2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate \$ 2,000,000

Products - Completed Operations Aggregate \$ 2,000,000

Personal and Advertising Injury \$ 1,000,000

Each Occurrence (Bodily Injury and Property Damage) \$ 1,000,000

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:

Each person \$ 1,000,000

Each accident \$ 1,000,000

Property Damage:

Each accident \$ 1,000,000

Combined Single Limit of \$ 1,000,000

4. Excess or Umbrella Liability:

Per Occurrence \$ 5,000,000

General Aggregate \$ 5,000,000

5. Contractor's Pollution Liability:

Each Occurrence \$ 1,000,000

General Aggregate \$ 2,000,000

☐

If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract

6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following:

1. Town of Essex
Mr. Kenneth Hughes
Town Supervisor
2313 Main Street
Essex, New York 12936

2. Mr. Brian Suozzo & Jonathan Soukup
Cedarwood Engineering Services, PLLC
3903 Main Street
Warrensburg, NY 12885

7. Contractor's Professional Liability:

Each Claim	\$ 2,000,000
Annual Aggregate	\$ 2,000,000

SC-6.05 Property Insurance

- SC-6.05.A. Add the following to the list of items in Paragraph 6.05.A, as numbered items:

14. include for the benefit of Owner loss of profits and soft cost coverage including, without limitation, fixed expenses and debt service for a minimum of 12 months with a maximum deductible of 30 days, plus attorneys fees and engineering or other consultants' fees, if not otherwise covered;
17. include by express endorsement coverage of damage to Contractor's equipment.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SC-7.02 Labor; Working Hours

- SC-7.02.B. Add the following new subparagraphs immediately after Paragraph 7.02.B:

1. Regular working hours will be 8 AM to 5 PM.
2. Owner's legal holidays are :
- New Year's
- Martin Luther King, Jr. Day
- Presidents Day
- Memorial Day
- Independence Day
- Labor Day
- Columbus Day

Election Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day
Day after Christmas

~~SC-7.02.B. Amend the first and second sentences of Paragraph 7.02.B to state "...all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday."~~

SC-7.04.A Amend the third sentence of Paragraph 7.04A by striking out the following words:

Unless the specification or description contains or is followed by words reading that no like, equivalent, or 'or-equal' item is permitted

SC-7.04.A.1 Amend the last sentence of Paragraph a.3 by striking out "and;" and adding a period at the end of Paragraph a.3.

SC-7.04.A.1 Delete paragraph 7.04.A.1.a.4 in its entirety and insert the following in its place:

[Deleted]

SC 7.06.A Amend Paragraph 7.06.A by adding the following text to the end of the Paragraph:

The Contractor shall not award work valued at more than fifty percent of the Contract Price to Subcontractor(s), without prior written approval of the Owner

SC 7.06.B Delete paragraph 7.06.B in its entirety and insert the following in its place:

[Deleted]

SC 7.06.E Amend the second sentence of Paragraph 7.06.E by striking out "Owner may also require Contractor to retain specific replacements; provided, however, that".

SC-7.09 Taxes

SC 7.09 Add a new paragraph immediately after Paragraph 7.09.A:

B. Owner is exempt from payment of sales and compensating use taxes of the State of New York and of cities and counties thereof on all materials to be incorporated into the Work.

- 1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.**
- 2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.**

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

SC-10.03 *Project Representative*

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A:

- B.** The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
- 1.** General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
 - 2.** Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.
 - 3.** Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
 - 4.** Liaison:
 - a.** Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b.** Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c.** Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
 - 5.** Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
 - 6.** Shop Drawings and Samples:
 - a.** Record date of receipt of Samples and Contractor-approved Shop Drawings.
 - b.** Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
 - c.** Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
 - 7.** Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions,

together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.

8. Review of Work and Rejection of Defective Work:

- a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
- b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in 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 that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

9. Inspections, Tests, and System Start-ups:

- a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
- b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

10. Records:

- a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, 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.
- b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- c. Maintain records for use in preparing Project documentation.

11. Reports:

- a. Furnish to 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.
- b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.

- c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.
- 12. **Payment Requests:** 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.
- 13. **Certificates, Operation and Maintenance Manuals:** During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.
- 14. **Completion:**
 - a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
 - b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
 - c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.
- C. **The RPR shall not:**
 - 1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
 - 2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
 - 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
 - 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
 - 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
8. Authorize Owner to occupy the Project in whole or in part.

SC 11.07.C Add the following new Paragraph after Paragraph 11.07.B:

All Contract Change Orders must be concurred in by Agency before they are effective.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

SC 13.02.C Delete Paragraph 13.02.C in its entirety and insert the following in its place:

[Deleted]

SC-13.03 Unit Price Work

SC 13.03.E Delete Paragraph 13.03.E in its entirety and insert the following in its place:

- E. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:
 1. if the extended price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 25 percent from the estimated quantity of such item indicated in the Agreement; and
 2. if there is no corresponding adjustment with respect to any other item of Work; and
 3. if Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

- SC 15.01.B** Amend the second sentence of Paragraph 15.01.B.1 by striking out the following text: “a bill of sale, invoice, or other.”
- SC 15.01.B.3** Add the following language at the end of paragraph 15.01.B.3:
No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor.
- SC15.01.B.4** Add the following new Paragraph after Paragraph 15.01.B.3:
The Application for Payment form to be used on this Project is EJCDC C-620. The Agency must approve all Applications for Payment before payment is made.
- SC 15.01.D.1** Delete Paragraph 15.01.D.1 in its entirety and insert the following in its place:
The Application for Payment with Engineer’s recommendations will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 15.01.E will become due twenty (20) days after Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.
- SC 15.02.A** Amend Paragraph 15.02.A by striking out the following text: “no later than seven days after the time of payment by Owner” and insert “no later than the time of payment by Owner.”

SC-15.03 Substantial Completion

SC 15.03.B Add the following new subparagraph to Paragraph 15.03.B:

- 1.** If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

ARTICLE 18 Miscellaneous

SC-18.09 Add the following new paragraph after Paragraph 18.08:

Tribal Sovereignty. No provision of this Agreement will be construed by any of the signatories as abridging or debilitating any sovereign powers of the {insert name of Tribe} Tribe; affecting the trust-beneficiary relationship between the Secretary of the Interior, Tribe, and Indian landowner(s); or interfering with the government-to-government relationship between the United States and the Tribe.

ARTICLE 19 **ADD ARTICLE 19 TITLED “FEDERAL REQUIREMENTS”**

SC 19.01 Add the following language as Paragraph 19.01 with the title “Agency Not a Party”:

A. This Contract is expected to be funded in part with funds provided by Agency. Neither Agency, nor any of its departments, entities, or employees is a party to this Contract.

SC 19.02 Add the following language after Article 19.02.B with the title “Contract Approval”:

A. Concurrence by Agency in the award of the Contract is required before the Contract is effective.

SC 19.03 Add the following language after Article 19.02.B with the title “Conflict of Interest & Gratuities”:

A. Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the plans and specifications has a corporate or financial affiliation with the supplier or manufacturer. Owner’s officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer, or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest or other interest or a tangible personal benefit from the Contractor. Owner’s officers, employees, or agents shall neither solicit nor accept gratuities, favors, or anything of monetary value from Contractor or subcontractors.

SC 19.04 Add the following language after Article 19.03.A with the title “Gratuities”:

A. If Owner finds after a notice and hearing that Contractor, or any of Contractor’s agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner may, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.

B. In the event this Contract is terminated as provided in paragraph 19.04.A, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary

damages in an amount (as determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee.

~~SC 19.05 Add the following language after Article 19.04.B with the title “Audit and Access to Records”:~~

~~A. Owner, Agency, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Contractor which are pertinent to the Agreement, for the purpose of making audits, examinations, excerpts, and transcriptions. Engineer shall maintain all required records for three years after final payment is made and all other pending matters are closed.~~

SC 19.05 Add the following language after Article 19.05.A with the title “Small, Minority and Women’s Businesses”:

A. Contracting with small and minority businesses, women’s business enterprises, and labor surplus area firms. If Contractor intends to let any subcontracts for a portion of the work, Contractor must take all necessary affirmative steps to assure that minority businesses, women’s business enterprises, and labor surplus area firms are used when possible. Affirmative steps must include:

- (1) Placing qualified small and minority businesses and women’s business enterprises on solicitation lists;
- (2) Assuring that small and minority businesses, and women’s business enterprises are solicited whenever they are potential sources;
- (3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women’s business enterprises;
- (4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women’s business enterprises; and
- (5) Using the service and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

SC 19.06 Add the following after Article 19.06.A with the title “Anti-Kickback”:

A. Contractor shall comply with the Copeland Anti-Kickback Act (40 U.S.C 3145) as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that Contractor or subcontractor must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. Owner shall report all suspected or reported violations to Agency.

SC 19.07 Add the following after Article 19.07.A with the title “Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended”:

A. Contractor to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

SC 19.08 Add the following after Article 19.09 with the title "Equal Employment Opportunity":

A. The Contract is considered a federally assisted construction contract. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p.339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

SC-19.10 Add the following after Article 19.11.A with the title "Environmental Requirements":

When constructing a Project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental conditions:

A. Wetlands – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.

B. Floodplains – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert 100-year floodplain areas (Standard Flood Hazard Area) delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, e.g., alluvial soils on NRCS Soil Survey Maps.

C. Historic Preservation – Any excavation by Contractor that uncovers an historical or archaeological artifact or human remains shall be immediately reported to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the State Historic Preservation Officer (SHPO) and appropriate Nation.

D. Endangered Species – Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.

E. Mitigation Measures – The following environmental mitigation measures are required on this Project: none.

~~B. Contractor's compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative active~~

~~obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographical area where the Contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract, and in each trade, and Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor's goals shall be a violation of the Contract, the Executive Order, and the regulations in 41 CFR part 60-4. Compliance with the goals will be measured against the total work hours performed.~~

~~C. Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the Contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the Contract is to be performed.~~

- SC 19.11 Add the following after Article 19. with the title "Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708)":

A. Where applicable, for contracts awarded by Owner in excess of \$100,000 that involve the employment of mechanics or laborers, the Contractor must comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, the Contractor must compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

- SC 19.12 Add the following after Article 19. With the title "Debarment and Suspension (Executive Orders 12549 and 12689)":

A. A contract award (see 2 CFR 180.220) must not be made to parties listed on the government-wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

- SC 19.13 Add the following after Article 19. with the title "*Procurement of recovered materials*":

A. The Contractor must comply with 2 CFR Part 200.322, "Procurement of recovered materials."

ARTICLE 20 ADD ARTICLE 20 TITLED "PROVISION FOR PUBLIC WORKS UNDER NEW YORK STATE LAW"

SC 20.01 Add the following language as Paragraph 20.01:

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, 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 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) That contracts of \$250,000.00 or more require every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. Training shall occur prior to performing any work on the project.
- (f) 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.

ARTICLE 21 ADD ARTICLE 21 TITLED "SUBMISSION OF CERTIFIED PAYROLLS"

SC 21.01 Add the following language as Paragraph 21.01:

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.

For contracts over \$250,000, CONTRACTOR and sub-contractors shall, in accordance with New York Labor Law Section 220-H, attach a copy of proof of completion of the OSHA10 course to the first certified payroll submitted to the contracting agency and on

each succeeding payroll where any new or additional employee is first listed. Proof of completion may include but is not limited to:

- (a) Copies of bona fide course completion card;
- (b) Training roster, attendance record of other documentation from the certified trainer pending the issuance of the card.
- (c) Other valid proof.

Certification by the employer attesting that all employees have completed such course is not sufficient proof that the course has been completed.

ARTICLE 22 ADD ARTICLE 21 TITLED “CONFLICTS WITH NEW YORK STATE LAW”

SC 22.01 Add the following language as Paragraph 22.01:

Should any provision of the General or Supplemental Conditions contained herein conflict with New York State law, New York State law shall control.

ARTICLE 23 ADD ARTICLE 23 TITLED “NEW YORK STATE CERTIFICATION OF APPRENTICESHIP”

SC 23.01 Add the following language as Paragraph 23.01:

For Contracts over \$200,000, and in accordance with New York Labor Law §816-b, CONTRACTOR shall enter into apprenticeship agreements appropriate for the type and scope of the work to be performed that have been registered with, and approved by, the Commissioner of Labor of the State of New York. Upon request, CONTRACTOR shall provide, within 10 days, a copy of the apprenticeship agreements to the OWNER. All subcontractors to the prime contract with a contract amount over \$200,000 shall comply with the New York Labor Law 816-b and will be required to submit the “Certification of Apprenticeship Programs”.

Suppliers are exempt from this requirement.

ARTICLE 24 ADD ARTICLE 24 TITLED “DIRECT CLAIMS”

SC 24.01 Add the following language as Paragraph 24.01:

CONTRACTOR shall make no direct claim against ENGINEER or its consultants for costs or damages arising out of, resulting from or in connection with any alleged act, error, or omission by ENGINEER. Provided that this limitation shall not prohibit the Contractor from making such claims against the party with whom it has contracted nor prevent such party from making claims against the ENGINEER, except as otherwise limited in their agreements.



Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

Town of Essex

Jenny Connelly, Cedarwood Engineering Services
3903 Main Street
Warrensburg NY 12885

Schedule Year 2019 through 2020
Date Requested 11/27/2019
PRC# 2019015028

Location Essex, New York
Project ID# TE-2020-G/E
Project Type Construct temp water treatment plant in exist building, partial demo of exist water treatment plant, construct water treatment plant addition, pump station, san force main, mechanicals, piping,

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 2019 through June 2020. 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.ny.gov. 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.

Both the PW 16 and PW 200 forms are available for completion [online](#).

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.

There are very few exceptions to this rule. Complete information regarding these exceptions is available on the "[4 Day / 10 Hour Work Schedule](#)" form (PW 30.1).

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 from 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.ny.gov.

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.ny.gov.

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.ny.gov.

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, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment. 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 collect, review for facial validity, 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, but 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 and 235.2 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.

The ["Public Work Project"](#) notice must be posted at the beginning of the performance of every public work contract, on each job site.

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 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, 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.



Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

Town of Essex

Jenny Connelly, Cedarwood Engineering Services
3903 Main Street
Warrensburg NY 12885

Schedule Year 2019 through 2020
Date Requested 11/27/2019
PRC# 2019015028

Location Essex, New York
Project ID# TE-2020-G/E
Project Type Construct temp water treatment plant in exist building, partial demo of exist water treatment plant, construct water treatment plant addition, pump station, san force main, mechanicals, piping,

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: \$ _____	Contract Type:	
Approximate Starting Date: ____/____/____	<input type="checkbox"/> (01) General Construction	
Approximate Completion Date: ____/____/____	<input type="checkbox"/> (02) Heating/Ventilation	
	<input type="checkbox"/> (03) Electrical	
	<input type="checkbox"/> (04) Plumbing	
	<input type="checkbox"/> (05) Other : _____	

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

IMPORTANT NOTICE

FOR

CONTRACTORS & CONTRACTING AGENCIES

Social Security Numbers on Certified Payrolls

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concerns with regard to inclusion of this information on payrolls if another identifier will suffice.

For these reasons, *the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor.*

NOTE: This change does not affect the Department's ability to request and receive the entire social security number from employers during the course of its public work / prevailing wage investigations.

**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

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, maintenance and repair, 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, maintenance and repair, 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, maintenance and repair, 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.

Construction Industry Fair Play Act

Required Posting For Labor Law Article 25-B § 861-d

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site.

Failure to post the notice can result in penalties of up to \$1,500 for a first offense and up to \$5,000 for a second offense.

The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, www.labor.ny.gov.

If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: dol.misclassified@labor.state.ny.us .



Required Notice under Article 25-B of the Labor Law

**Attention All Employees, Contractors and Subcontractors:
You are Covered by the Construction Industry Fair Play Act**

The law says that you are an employee unless:

- You are free from direction and control in performing your job, **and**
- You perform work that is not part of the usual work done by the business that hired you, **and**
- You have an independently established business.

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

It is against the law for an employer to misclassify employees as independent contractors or pay employees off the books.

Employee Rights: If you are an employee, you are entitled to state and federal worker protections. These include:

- Unemployment Insurance benefits, if you are unemployed through no fault of your own, able to work, and otherwise qualified,
- Workers' compensation benefits for on-the-job injuries,
- Payment for wages earned, minimum wage, and overtime (under certain conditions),
- Prevailing wages on public work projects,
- The provisions of the National Labor Relations Act, and
- A safe work environment.

It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

Independent Contractors: If you are an independent contractor, **you must pay all taxes and Unemployment Insurance contributions required by New York State and Federal Law.**

Penalties for paying workers off the books or improperly treating employees as independent contractors:

- **Civil Penalty**
 - First offense: Up to \$2,500 per employee
 - Subsequent offense(s): Up to \$5,000 per employee
- **Criminal Penalty**
 - First offense: Misdemeanor - up to 30 days in jail, up to a \$25,000 fine and debarment from performing public work for up to one year.
 - Subsequent offense(s): Misdemeanor - up to 60 days in jail or up to a \$50,000 fine and debarment from performing public work for up to 5 years.

If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at (866) 435-1499 or send an email to dol.misclassified@labor.ny.gov. All complaints of fraud and violations are taken seriously. You can remain anonymous.

Employer Name:

IA 999 (09/16)

WORKER NOTIFICATION

(Labor Law §220, paragraph a of subdivision 3-a)

Effective February 24, 2008

This provision is an addition to the existing prevailing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the *prevailing wage rate* for their particular job classification *on each pay stub**. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract *on each job site* that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her particular job classification. The required notification will be provided with each wage schedule, may be downloaded from our website www.labor.ny.gov or made available upon request by contacting the Bureau of Public Work at 518-457-5589.

* In the event that the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

Attention Employees

THIS IS A: **PUBLIC WORK PROJECT**

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

Chapter 629 of
the Labor Laws
of 2007:

**These wages are set by law and must be posted
at the work site. They can also be found at:**
www.labor.ny.gov

If you feel that you have not received proper wages or benefits,
please call our nearest office.*

Albany	(518) 457-2744	Patchogue	(631) 687-4882
Binghamton	(607) 721-8005	Rochester	(585) 258-4505
Buffalo	(716) 847-7159	Syracuse	(315) 428-4056
Garden City	(516) 228-3915	Utica	(315) 793-2314
New York City	(212) 932-2419	White Plains	(914) 997-9507
Newburgh	(845) 568-5156		

* For New York City government agency construction projects, please
contact the Office of the NYC Comptroller at (212) 669-4443, or
www.comptroller.nyc.gov – click on Bureau of Labor Law.

Contractor Name: _____

Project Location: _____

OSHA 10-hour Construction Safety and Health Course – S1537-A

Effective July 18, 2008

This provision is an addition to the existing prevailing wage rate law, Labor Law §220, section 220-h. It requires that on all public work projects of at least \$250,000.00, all laborers, workers and mechanics working on the site, be certified as having successfully completed the OSHA 10-hour construction safety and health course. It further requires that the advertised bids and contracts for every public work contract of at least \$250,000.00, contain a provision of this requirement.

NOTE: The OSHA 10 Legislation only applies to workers on a public work project that are required, under Article 8, to receive the prevailing wage.

Where to find OSHA 10-hour Construction Course

1. NYS Department of Labor website for scheduled outreach training at:

https://labor.ny.gov/workerprotection/safetyhealth/dosh_training.shtm

2. OSHA Training Institute Education Centers:

Rochester Institute of Technology OSHA Education Center

Rochester, NY

Donna Winter

Fax (585) 475-6292

e-mail: dlwtpo@rit.edu

(866) 385-7470 Ext. 2919

www.rit.edu/~outreach/course.php3?CourseID=54

Atlantic OSHA Training Center

UMDNJ – School of Public Health

Piscataway, NJ

Janet Crooks

Fax (732) 235-9460

e-mail: crooksje@umdnj.edu

(732) 235-9455

<https://ophs.umdj.edu/wconnect/ShowSchedule.awp?~~GROUP~AOTCON~10~>

Atlantic OSHA Training Center

University at Buffalo

Buffalo, New York

Joe Syracuse

Fax (716) 829-2806

e-mail: <mailto:japs@buffalo.edu>

(716) 829-2125

http://www.smbs.buffalo.edu/CENTERS/trc/schedule_OSHA.php

Keene State College

Manchester, NH

Leslie Singleton

e-mail: lsingleton@keene.edu

(800) 449-6742

www.keene.edu/courses/print/courses_oshacfm

3. List of trainers and training schedules for OSHA outreach training at:

www.OutreachTrainers.org

Requirements for OSHA 10 Compliance

Chapter 282 of the Laws of 2007, codified as Labor Law 220-h took effect on July 18, 2008. The statute provides as follows:

The advertised specifications for every contract for public work of \$250,000.00 or more must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training “prior to the performing any work on the project.”

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.*)
- Training roster, attendance record of other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

******A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-485-5696.

WICKS Reform 2008

(For all contracts advertised or solicited for bid on or after 7/1/08)

- Raises the threshold for public work projects subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work. The total project's threshold would increase from \$50,000 to: \$3 million in Bronx, Kings, New York, Queens and Richmond counties; \$1.5 million in Nassau, Suffolk and Westchester counties; and \$500,000 in all other counties.
- For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical work and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or use of a Project Labor Agreement (PLA), and must be open to public inspection.
- Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.
- The Commissioner of Labor shall have the power to enforce separate specification requirements on projects, and may issue stop-bid orders against public owners for non-compliance.
- Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.
- Reduces from 15 to 7 days the period in which contractors must pay subcontractors.

IMPORTANT INFORMATION

Regarding Use of Form PW30.1 (Previously 30R)

“Employer Registration for Use of 4 Day / 10 Hour Work Schedule”

To use the ‘4 Day / 10 Hour Work Schedule’:

There **MUST** be a *Dispensation of Hours (PW30)* in place on the project

AND

You **MUST** register your intent to work 4 / 10 hour days, by completing the PW30.1 Form.

REMEMBER...

The ‘4 Day / 10 Hour Work Schedule’ applies **ONLY** to Job Classifications and Counties listed on the PW30.1 Form.

Do not write in any additional Classifications or Counties.

(Please note : For each Job Classification check the individual wage schedule for specific details regarding their 4/10 hour day posting.)

Instructions for Completing Form PW30.1

(Previously 30R)

“Employer Registration for Use of 4 Day / 10 Hour Work Schedule”

Before completing Form PW30.1 check to be sure ...

- There is a *Dispensation of Hours* in place on the project.
- The 4 Day / 10 Hour Work Schedule applies to the Job Classifications you will be using.
- The 4 Day / 10 Hour Work Schedule applies to the County / Counties where the work will take place.

Instructions (Type or Print legibly):

Contractor Information:

- Enter the Legal Name of the business, FEIN, Street Address, City, State, Zip Code; the Company's Phone and Fax numbers; and the Company's email address (if applicable)
- Enter the Name of a Contact Person for the Company along with their Phone and Fax numbers, and the personal email address (if applicable)

Project Information:

- Enter the Prevailing Rate Case number (PRC#) assigned to this project
- Enter the Project Name / Type (i.e. Smithtown CSD – Replacement of HS Roof)
- Enter the Exact Location of Project (i.e. Smithtown HS, 143 County Route #2, Smithtown, NY; Bldgs. 1 & 2)
- If you are a Subcontractor, enter the name of the Prime Contractor for which you work
- On the Checklist of Job Classifications -
 - Go to pages 2 and 3 of the form
 - Place a checkmark in the box to the right of the Job Classification you are choosing
 - Mark all Job Classifications that apply

Do not write in any additional Classifications or Counties.

Requestor Information:

- Enter the name of the person submitting the registration, their title with the company, and the date the registration is filled out

Return Completed Form:

- **Mail** the completed PW30.1 form to: NYSDOL Bureau of Public Work, SOBC – Bldg.12 – Rm.130, Albany, NY 12240 **-OR-**
- **Fax** the completed PW30.1 form to: NYSDOL Bureau of Public Work at (518)485-1870



Department of Labor

Bureau of Public Work Harriman
State Office Campus
Building 12, Room 130
Albany, New York 12240
Phone: (518) 457-5589 | Fax: (518) 485-1870
www.labor.ny.gov

Employer Registration for Use of 4 Day / 10 Hour Work Schedule

Before completing this form, make sure that:

- There is a **Dispensation of Hours** in place on the project.
- The 4 Day / 10 Hour Work Schedule applies to the Job Classifications you will be using.
- The 4 Day / 10 Hour Work Schedule applies to the County / Counties where the work will take place.

Please **type or print** the requested information and then **mail or fax** to the address above.

Contractor Information

Company Name: _____ FEIN: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone No: _____ Fax No: _____ Email: _____

Contact Person: _____

Phone No: _____ Fax No: _____ Email: _____

Project Information

Project PRC#: _____ Project Name/Type: _____

Exact Location
of Project: _____ County: _____

(If you are Subcontractor)

Prime Contractor Name: _____

Job Classification(s) to Work 4/10 Schedule: *(Choose all that apply on Job Classification Checklist - Pages 3-8)*
*** Do not write in any additional Classifications or Counties***

Requestor Information

Name: _____

Title: _____ Date: _____

Please use the list below with the number assigned to each county as a reference to the corresponding numbers listed in the following pages under **Entire Counties & Partial Counties**.

- | | | | |
|-----|-----------------------------|-----|---------------------------------|
| 1. | Albany County | 33. | Oneida County |
| 2. | Allegany County | 34. | Onondaga County |
| 3. | Bronx County | 35. | Ontario County |
| 4. | Broome County | 36. | Orange County |
| 5. | Cattaraugus County | 37. | Orleans County |
| 6. | Cayuga County | 38. | Oswego County |
| 7. | Chautauqua County | 39. | Otsego County |
| 8. | Chemung County | 40. | Putnam County |
| 9. | Chenango County | 41. | Queens County |
| 10. | Clinton County | 42. | Rensselaer County |
| 11. | Columbia County | 43. | Richmond County (Staten Island) |
| 12. | Cortland County | 44. | Rockland County |
| 13. | Delaware County | 45. | Saint Lawrence County |
| 14. | Dutchess County | 46. | Saratoga County |
| 15. | Erie County | 47. | Schenectady County |
| 16. | Essex County | 48. | Schoharie County |
| 17. | Franklin County | 49. | Schuyler County |
| 18. | Fulton County | 50. | Seneca County |
| 19. | Genesee County | 51. | Steuben County |
| 20. | Greene County | 52. | Suffolk County |
| 21. | Hamilton County | 53. | Sullivan County |
| 22. | Herkimer County | 54. | Tioga County |
| 23. | Jefferson County | 55. | Tompkins County |
| 24. | Kings County (Brooklyn) | 56. | Ulster County |
| 25. | Lewis County | 57. | Warren County |
| 26. | Livingston County | 58. | Washington County |
| 27. | Madison County | 59. | Wayne County |
| 28. | Monroe County | 60. | Westchester County |
| 29. | Montgomery County | 61. | Wyoming County |
| 30. | Nassau County | 62. | Yates County |
| 31. | New York County (Manhattan) | | |
| 32. | Niagara County | | |

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

*** Do not write in any additional Classifications or Counties***

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Carpenter – Building	276B-All	7	2 ,5	
Carpenter – Building	276B-Cat	15	5	
Carpenter – Building	276-B-LIV	26, 28, 35, 59	61	
Carpenter – Building	276B-Gen	19, 32, 37	61	
Carpenter – Heavy & Highway	276HH-All	2, 5, 7		
Carpenter – Heavy & Highway	276HH-Erie	15		
Carpenter – Heavy & Highway	276HH- Gen	19, 32, 37, 61		
Carpenter – Heavy & Highway	276HH-Liv	26, 28, 35, 59		
Carpenter – Residential	276R-All	7	2, 5	
Carpenter – Building	277B-Bro	4, 54		
Carpenter – Building	277B-CAY	6, 50, 62		
Carpenter – Building	277B-CS	8, 12, 49, 51, 55	2	
Carpenter – Building	277 JLS	23, 25, 45		
Carpenter – Building	277 omh	22, 27, 33		
Carpenter – Building	277 On	34		
Carpenter – Building	277 Os	38		
Carpenter – Building	277CDO Bldg	9, 13, 39		
Carpenter – Heavy & Highway	277CDO HH	9, 13, 39		
Carpenter – Heavy & Highway	277HH-BRO	4, 6, 8, 12, ,22, 23, 25, 27, 33, 34, 38, 45, 49, 50, 51, 54, 55, 62		
Carpenter – Building	291B-Alb	1, 18, 20, 29, 42, 47, 48		
Carpenter – Building	291B-Cli	10, 16, 17		
Carpenter – Building	291B-Ham	21, 57, 58		
Carpenter – Building	291B-Sar	46		
Carpenter – Heavy & Highway	291HH-Alb	1, 10, 16, 17,18, 20, 21, 29, 42, 46, 47, 48, 57, 58		
Electrician	25m	30, 52		
Electrician – Teledata Cable Splicer	43	12, 22, 27, 33, 38	6, 9, 34, 39, 55, 59	

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

*** Do not write in any additional Classifications or Counties***

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Electrician	86	26, 28	19, 35, 37, 59, 61	
Electrician	840 Teledata and 840 Z1	62	6, 34, 35, 50, 59	
Electrician	910	10, 16, 17, 23, 25, 45		
Electrical Lineman	1049Line/Gas	30, 41, 52		
Electrical Lineman	1249a	1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 32, 33, 34, 35, 36, 37, 38, 39, 40, 42, 44, 46, 47, 48, 49, 50, 45, 51, 53, 54, 55, 56, 57, 58, 59, 61, 62		
Electrical Lineman	1249a West	60		
Electrical Lineman	1249a-LT	1, 2, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 32, 33, 34, 35, 37, 38, 39, 42, 46, 47, 48, 49, 50, 45, 51, 53, 54, 55, 57, 58, 59, 61, 62		
Electrical Lineman	1249aREG8LT	11, 14, 36, 40, 44, 56		
Electrical Lineman	1249aWestLT	60		
Elevator Constructor	138	11, 14, 20, 36, 40, 53, 56	13, 44, 60	
Elevator Constructor	14	2, 5, 7, 15, 19, 32, 37, 61		
Elevator Constructor	27	8, 26, 28, 35, 49, 50, 51, 59, 62		
Elevator Constructor	35	1, 10, 16, 18, 21, 22, 29, 39, 42, 46, 47, 48, 57, 58		
Elevator Constructor	62.1	4, 6, 9, 12, 23, 25, 27, 33, 34, 38, 45, 54, 55	13	
Glazier	201	1, 10, 11, 16, 17, 18, 20, 21, 29, 42, 46, 47, 48, 57, 58		
Glazier	660r	2, 5, 7, 15, 19, 32, 37, 61		
Glazier	660	2, 5, 7, 15, 19, 32, 37, 61		
Glazier	677.1	23, 25, 26, 28, 35, 45, 50, 59, 62		
Glazier	677Z-2	6, 12, 22, 27, 33, 34, 38		
Glazier	677z3	4, 8, 9, 13, 39, 49, 51, 54, 55		
Glazier	677r.2	6, 12, 22, 27, 33, 34, 38		
Insulator – Heat & Frost	30-Syracuse	4, 6, 8, 9, 12, 22, 23, 25, 27, 33, 34, 38, 39, 49, 50, 45, 54, 55		
Laborer – Building	621b	2, 7	5	
Laborer – Building	633 bON	34		

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

*** Do not write in any additional Classifications or Counties***

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Laborer – Building	633b Cay	6		
Laborer – Building	633bOS	38		
Laborer – Building	785(7)	4	9, 13, 54	
Laborer – Building	785B-CS	8, 51	49	
Laborer – Building	7-785b	12, 55	49, 54	
Laborers – Heavy & Highway	157h/h	47	18, 29, 46	
Laborers – Heavy & Highway	190 h/h	1, 42, 58	11, 20, 46	
Laborers – Heavy & Highway	35/2h	21, 22, 27, 33	18, 29	
Laborer – Residential	621r	2, 7	5	
Laborers – Tunnel	157	47	18, 29, 46	
Laborers – Tunnel	35T	21, 22, 27, 33	18, 29	
Laborers – Tunnel	190	1, 42, 58	11, 20, 46	
Mason – Building	2TS.1	1, 10, 11, 16, 17, 18, 20, 21, 29, 42, 46, 47, 48, 57, 58		
Mason – Building	2TS.2	22, 23, 25, 33, 45	27	
Mason – Building	2TS.3	6, 34, 38	27	
Mason – Building	2b-on	34		
Mason – Building	2b.1	1, 11, 18, 20, 21, 29, 42, 46, 47, 48, 58	57	
Mason – Building	2b.2	22, 33	25	
Mason – Building	2b.3	6, 34	27	
Mason – Building	2b.4	38		
Mason – Building	2b.5	23	25	
Mason – Building	2b.6	45		
Mason – Building	2b.8	10, 16, 17	57	
Mason – Building	3b-Co-Z2	8, 49, 51	2	
Mason – Building	3B-Z1	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Building – Residential	3B-Z1R	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Building	3B-Bing-Z2	4, 9, 13, 39, 54		
Mason – Building	3B-lth-Z2	12, 55		

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

*** Do not write in any additional Classifications or Counties***

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Mason – Building	3B-Jam-Z2	7	2, 5	
Mason – Building – Residential	3B-Jam-Z2R	2, 4, 8, 7, 9, 12, 39, 13, 49, 51, 54, 55	5	
Mason – Building	3B-Z3	15, 32	5	
Mason – Building	3B-Z3.Orleans	37		
Mason – Residential	3B-Z3R	15, 32	5	
Mason – Residential	3B-z3R.Orleans	37		
Mason - Heavy & Highway	3h	2, 4, 8, 7, 9, 12, 13, 19, 26, 28, 35, 37, 39, 49, 50, 51, 54, 55, 59, 61, 62	5, 15, 32	
Mason – Tile Finisher	3TF-Z1	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Finisher	3TF-Z2	2, 4, 8, 7, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Finisher	3TF-Z3	15, 32, 37	5	
Mason – Tile Finisher	3TF-Z1R	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Finisher	3TF-Z2R	2, 4, 7, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Finisher	3TF-Z3R	15, 32, 37	5	
Mason – Tile Setter	3TS-Z1	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Setter Residential	3TS-Z1R	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Setter	3TS-Z2	2, 4, 7, 8, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Setter Residential	3TS-Z2R	2, 4, 7, 8, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Setter	3TS-Z3	15, 32, 37	5	
Mason – Tile Setter Residential	3TS-Z3R	15, 32, 37	5	
Mason – Building/Heavy & Highway	780	3, 24, 30, 31, 41, 43, 52		
Operating Engineer - Heavy & Highway	137H/H	40, 60	14	
Operating Engineer – Heavy & Highway	158-832H	2, 8, 26, 28, 35, 49, 51, 59, 62	19	
Operating Engineer – Heavy & Highway	158-H/H	1, 4, 9, 10, 11, 14, 16, 17, 18, 20, 21, 22, 29, 39, 42, 46, 47, 48, 54, 57, 58		
Operating Engineer – Heavy & Highway	158-545h	6, 12, 23, 25, 27, 33, 38, 45, 50, 55		
Painter	1456-LS	1, 3, 10, 11, 14, 16, 17, 18, 20, 21, 24, 29, 30, 31, 36, 40, 41, 42, 43, 44, 46, 47, 48, 52, 53, 56, 57, 58, 60		
Painter	150	28, 59, 62	26, 35	

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

*** Do not write in any additional Classifications or Counties***

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Painter	178 B	4, 9, 54		
Painter	178 E	8, 49	51	
Painter	178 I	12, 55		
Painter	178 O	13, 39		
Painter	31	6, 22, 27, 33, 34, 50	25, 35, 38	
Painter	38.O		38	
Painter	38.W	23, 45	25	
Painter	4- Buf,Nia,Olean	2, 15, 19, 32, 37, 61	5, 7, 26, 51	
Painter	4-Jamestown		5, 7	
Sheetmetal Worker	46	26, 28, 35, 50, 59, 62		
Sheetmetal Worker	46r	26, 28, 35, 50, 59, 62		
Teamsters – Heavy & Highway	294h/h	1, 11, 18, 20, 29, 42, 46, 47, 48, 58	57	
Teamsters – Heavy & Highway	317bhh	6, 12, 50, 51, 55, 62	2	
Teamsters - Building/Heavy & Highway	456	40, 60		

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.

Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.

Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.

Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

Payrolls and Payroll Records

Contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records.

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.

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

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. However, the specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

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 straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

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.ny.gov) 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 (Construction)	1:1,1:4
Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3
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	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
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 - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
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

Essex County General Construction

Boilermaker

11/01/2019

JOB DESCRIPTION Boilermaker

DISTRICT 1

ENTIRE COUNTIES

Albany, Broome, Chenango, Columbia, Delaware, Essex, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Tioga, Warren, Washington

WAGES

Per hour

07/01/2019

01/01/2020

Additional

Boilermaker

\$ 37.29

\$ 1.59

SUPPLEMENTAL BENEFITS

Per hour

07/01/2019

Journeymen

\$ 24.53

+ 1.24*

* This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 25) on HOLIDAY PAGE

Note: When a holiday falls on Sunday, the day observed by the State or Nation shall be observed, and when Christmas Day and New Year's fall on Saturday, Friday will be observed as the holiday.

REGISTERED APPRENTICES

Wages per hour

(1/2) year terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th
65%	65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits per hour

1st	2nd	3rd	4th	5th	6th	7th	8th
18.42	18.42	19.30	20.16	21.03	21.91	22.79	23.65
+1.24*	+1.24*	+1.24*	+1.24*	+1.24*	+1.24*	+1.24*	+1.24*

* This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

1-197

Carpenter - Building

11/01/2019

JOB DESCRIPTION Carpenter - Building

DISTRICT 2

ENTIRE COUNTIES

Clinton, Essex, Franklin

WAGES

Per hour:

07/01/2019

07/01/2020

Additional

Carpenter

\$ 27.17

\$ 1.00

Floor Coverer

27.17

1.00

Carpet Layer

27.17

1.00

Dry-Wall

27.17

1.00

Lather

27.17

1.00

Diver-Wet Day

61.25

0.00

Diver-Dry Day

28.17

1.00

Diver Tender

28.17

1.00

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (not subject to overtime premiums):

- Pile Drivers shall receive \$0.25 per hour over the journeyman's rate of pay when performing piledriving work.
- Certified welders shall receive \$1.00 per hour over the journeyman's rate of pay when the employee is required to be certified and performs DOT or ABS specified welding work
- When an employee performs work within a contaminated area on a State and/or Federally designated hazardous waste site, and where relevant State and/or Federal regulations require employees to be furnished and use or wear required forms of personal protection, then the employee shall receive his regular hourly rate plus \$1.50 per hour.
- Depth pay for Divers based upon deepest depth on the day of the dive:
 - 0' to 80' no additional fee
 - 81' to 100' additional \$.50 per foot
 - 101' to 150' additional \$.75 per foot
 - 151' and deeper additional \$1.25 per foot
- Penetration pay for Divers based upon deepest penetration on the day of the dive:
 - 0' to 50' no additional fee
 - 51' to 100' additional \$.75 per foot
 - 101' and deeper additional \$1.00 per foot
- Diver rates applies to all hours worked on dive day.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 20.89

OVERTIME PAY

See (B, E, *E2, Q) on OVERTIME PAGE

* Note - Saturday is payable at straight time if the employee misses work, except where a doctor's or hospital verification of illness is produced Monday through Friday when work was available to the employee.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

Note: Any holiday which occurs on Sunday shall be observed the following Monday. If Christmas falls on a Saturday, it shall be observed on the prior Friday.

REGISTERED APPRENTICES

Wages per hour

FOR APPRENTICES INDENTURED PRIOR TO JANUARY 1, 2016

One year terms at the following percentage of Journeyman's base wage.

1st	2nd	3rd	4th
50%	60%	70%	80%

Supplemental Benefits per hour:

1st year term	\$ 11.46
2nd year term	11.46
3rd year term	14.06
4th year term	14.06

FOR APPRENTICES INDENTURED AFTER JANUARY 1, 2016

1,300 hour terms at the following percentage of Journeyman's base wage.

1st	2nd	3rd	4th	5th
50%	60%	65%	70%	80%

Supplemental Benefits per hour:

1st term	\$ 11.46
2nd term	11.46
3rd term	14.06
4th term	14.06
5th term	14.06

ADDITIONAL AMOUNTS PAID TO APPRENTICES FOR SPECIFIC TYPES OF WORK PERFORMED (not subject to overtime premiums):

- Pile Driving apprentices shall receive \$0.25 per hour when performing piledriving work.

- Certified welders shall receive \$1.00 per hour over the apprentices rate of pay when the apprentice is required to be certified and performs DOT or ABS specified welding work
- When an apprentice performs work within a contaminated area on a State and/or Federally designated hazardous waste site, and where relevant State and/or Federal regulations require the apprentice to be furnished and use or wear required forms of personal protection, then the apprentice shall receive his regular hourly rate plus \$1.50 per hour.

2-291B-Cli

Carpenter - Building / Heavy&Highway

11/01/2019

JOB DESCRIPTION Carpenter - Building / Heavy&Highway

DISTRICT 2

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, 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, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES

Orange: The area lying on Northern side of Orange County demarcated by a line drawn from the Bear Mountain Bridge continuing east to the Bear Mountain Circle, continue North on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W, then east on County Road 107 to Route 32, then north on Route 32 to Orrs Mills Rd, then west on Orrs Mills Rd to Route 94, continue west and south on Route 94 to the Town of Chester, to the intersection of Kings Highway, continue south on Kings Highway to Bellvale Rd, west on Bellvale Rd to Bellvale Lakes Rd, then south on Bellvale Lakes Rd to Kain Rd, southeast on Kain Rd to Route 17A, then north and southeast along Route 17A to Route 210, then follow Route 210 to NJ Border.

WAGES

Wages per hour:	07/01/2019	07/01/2020 Additional	07/01/2021 Additional
Carpenter - ONLY for Artificial Turf/Synthetic Sport Surface	\$ 30.88	\$ 1.15	\$ 1.15

Note - Does not include the operation of equipment. Please see Operating Engineers rates.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 23.10

OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY

Paid: See (5) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE

Notes:

When a holiday falls upon a Saturday, it shall be observed on the preceding Friday. When a holiday falls upon a Sunday, it shall be observed on the following Monday.

An employee taking an unexcused day off the regularly scheduled day before or after a paid Holiday shall not receive Holiday pay.

REGISTERED APPRENTICES

Wages per hour:

One year terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th
55%	60%	70%	80%

Supplemental Benefits per hour:

1st year term	\$ 11.55
2nd year term	11.55
3rd year term	14.15
4th year term	14.15

2-42AtSS

Carpenter - Heavy&Highway

11/01/2019

JOB DESCRIPTION Carpenter - Heavy&Highway

DISTRICT 2

ENTIRE COUNTIES

Albany, Clinton, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES

Per hour	07/01/2019	07/01/2020 Additional	07/01/2021 Additional
Carpenter	\$ 33.02	\$ 1.40	\$ 1.40

Piledriver	33.02	1.40	1.40
Diver-Wet Day	58.02	1.40	1.40
Diver-Dry Day	34.02	1.40	1.40
Diver-Tender	34.02	1.40	1.40

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (not subject to overtime premiums):

- When project owner mandates a single irregular work shift, the employee will receive an additional \$2.00 per hour. A single irregular work shift can start any time from 5:00 p.m. to 1:00 a.m.
- State or Federal designated hazardous site, requiring protective gear shall be an additional \$2.00 per hour.
- Certified welders when required to perform welding work will receive an additional \$1.50 per hour.

ADDITIONAL NOTES PERTAINING TO DIVERS/TENDERS:

- Divers and Tenders shall receive one and one half (1 1/2) times their regular diver and tender rate of pay for Effluent and Slurry diving.
- Divers and tenders being paid at the specified rate for Effluent and Slurry diving shall have all overtime rates based on the specified rate plus the appropriate overtime rates (one and one half or two times the specified rate for Slurry and Effluent divers and tenders).
- The pilot of an ADS or submersible will receive one and one-half (1 1/2) times the Diver-Wet Day Rate for time submerged.
- All crew members aboard a submersible shall receive the Diver-Wet Day rate.
- Depth pay for Divers based upon deepest depth on the day of the dive (per diem payment):
 - 0' to 50' no additional fee
 - 51'to 100' additional \$.50 per foot
 - 101'to 150' additional \$.75 per foot
 - 151'and deeper additional \$1.25 per foot
- Penetration pay for Divers based upon deepest penetration on the day of the dive (per diem payment):
 - 0' to 50' no additional fee
 - 51' to 100' additional \$.75 per foot
 - 101' and deeper additional \$1.00 per foot
- Diver rates applies to all hours worked on dive day.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Friday, provided the project duration is more than forty (40) hours.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 22.50

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

In the event a Holiday falls on a Saturday, the Friday before will be observed as a Holiday. If a Holiday falls on a Sunday, then Monday will be observed as a Holiday. Employee must work scheduled work day before and after the Holiday.

REGISTERED APPRENTICES

Wages per hour

FOR APPRENTICES INDENTURED PRIOR TO JANUARY 1, 2016

One year terms at the following percentage of Journeyman's base wage

1st	2nd	3rd	4th
55%	60%	70%	80%

Supplemental Benefits per hour:

1st year term	\$ 11.42
2nd year term	11.42
3rd year term	14.02
4th year term	14.02

FOR APPRENTICES INDENTURED AFTER JANUARY 1, 2016

1,300 hour terms at the following percentage of Journeyman's base wage

1st	2nd	3rd	4th	5th
55%	60%	65%	70%	80%

Supplemental Benefits per hour:

1st term	\$ 11.42
2nd term	11.42
3rd term	14.02
4th term	14.02
5th term	14.02

NOTE ADDITIONAL AMOUNTS PAID TO APPRENTICES FOR THE FOLLOWING WORK LISTED BELOW (not subject to overtime premiums):

- When project owner mandates a single irregular work shift, the employee will receive an additional \$2.00 per hour. A single irregular work shift can start any time from 5:00 p.m. to 1:00 a.m.
- State or Federal designated hazardous site, requiring protective gear shall be an additional \$2.00 per hour.
- Certified welders when required to perform welding work will receive an additional \$1.50 per hour.

2-291HH-Alb

Electrician

11/01/2019

JOB DESCRIPTION Electrician

DISTRICT 6

ENTIRE COUNTIES

Clinton, Essex, Franklin, Jefferson, Lewis, St. Lawrence

WAGES

Per hour:	07/01/2019	04/01/2020	04/01/2021	04/01/2022
		Additional	Additional	Additional
Electrician	\$ 35.00	\$ 1.55	\$ 1.60	\$ 1.65
Teledata	35.00			
Welder	37.00			

NOTE: Additional premiums for the following work listed:

-Additional \$1.50 per hour for work performed underground such as tunnels and mine shafts. Excludes manholes and walkway tunnels between buildings.

-Additional \$1.50 per hour for working 35 feet or more on scaffolds, ladders, towers, steeples, structural steel, or mechanical lifts over 65 feet.

Shift Work: The following rates will apply on all Contracting Agency mandated shifts worked between the hours listed below. The employer may be permitted to adjust the starting hours of the shift by up to two (2) hours if required by the agency. If a shift begins outside of the stated shift hours, the rate paid would be determined by what shift the majority of the hours were worked.

1st shift:	8:00 AM to 4:30 PM regular wage rate
2nd shift:	4:30 PM to 1:00 AM regular wage rate plus 17.3%
3rd shift:	12:30 AM to 9:00 AM regular wage rate plus 31.4%

**** IMPORTANT NOTICE - EFFECTIVE 07/01/2012 ****

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour:	\$ 20.68
	*plus 5.75% of
	gross wage

* NOTE: THE 5.75% IS BASED ON THE HOURLY WAGE PAID, STRAIGHT TIME RATE OR PREMIUM TIME RATE.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked.

Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES: Hourly terms at the following percentage of Journeyman's wage.

	1-1000	to 2000	to 3500	to 5000	to 6500	to 8000
	45%	50%	55%	60%	70%	80%
Electrician	\$15.75	\$17.50	\$19.25	\$21.00	\$24.50	\$28.00
Tunnel	\$17.25	\$19.00	\$20.75	\$22.50	\$26.00	\$29.50

SUPPLEMENTAL BENEFITS per hour:

07/01/2019

Appr 1st & 2nd term \$ 10.02
* plus 5.75% of
gross wage

Appr All other terms \$ 20.68
* plus 5.75% of
gross wage

* NOTE: THE 5.75% IS BASED ON THE HOURLY WAGE PAID, STRAIGHT TIME RATE OR PREMIUM TIME RATE.

6-910

Elevator Constructor

11/01/2019

JOB DESCRIPTION Elevator Constructor

DISTRICT 1

ENTIRE COUNTIES

Albany, Clinton, Essex, Fulton, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES

Madison: Madison Only the towns of: Brookfield, Hamilton, Lincoln, Madison, Smithfield, Stockbridge and the City of Oneida
Oneida: Entire county except the towns of: Camden, Florence, and Vienna.

WAGES

Per hour

07/01/2019

01/01/2020

Mechanic \$ 46.00 \$ 47.51

Helper 70% of Mechanic Wage Rate 70% of Mechanic Wage Rate

Four (4), ten (10) hour days may be worked for New Construction and Modernization Work at straight time during a week, Monday thru Thursday or Tuesday thru Friday.

***Four (4), ten (10) hour days are not permitted for Contract Work/Repair Work

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour

07/01/2019

01/01/2020

Journeyman/Helper \$ 33.705* \$ 34.765*

(*)Plus 6% of hourly rate, if less than 5 years of service. Plus 8% of hourly rate, if more than 5 years of service.

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

Note: When a paid holiday falls on Saturday, it shall be observed on Friday. When a paid holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES

Wages per hour:

0-6 mo*	6-12 mo	2nd yr	3rd yr	4th yr
50%	55 %	65 %	70 %	80 %

(*)Plus 6% of the hourly rate, no additional supplemental benefits.

Supplemental Benefits - per hour worked:

Same as Journeyman/Helper

1-35

Glazier	11/01/2019
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JOB DESCRIPTION Glazier

DISTRICT 1

ENTIRE COUNTIES

Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES

Per hour

	07/01/2019	5/01/2020 Additional	5/01/2021 Additional
Glazier Base Wage	\$ 29.15	\$ 1.75	\$ 1.75
+ additional \$2.20 per hour for all hours worked			
High Work Base Wage*	31.55		
+ additional \$3.55 per hour for all hours worked			

(*)When working on Swing Stage or Lift 100 feet or more in height, measured from the ground level up.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.
NOTE - In order to use the 4 Day/10 Hour Work schedule, as your normal schedule, you must submit an Employer Registration for Use of 4 Day/10 Hour Work Schedule, form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour

Journeyman	\$ 20.06
Journeyman	
High Work	25.36

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

Premium is applied to the respective base wage only.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

Note: If any of the holidays are designated by federal law to be celebrated on a day other than that on which they regularly fall, then the holiday shall be celebrated on the day set by said federal law as if the day on which the holiday is celebrated was actually the holiday date.

REGISTERED APPRENTICES

Wages per hour

Apprentice Glazier One Year and 1500 hr. terms at the following percentage of Journeymans base wage.

1st	2nd	3rd	4th
50%	65%	75%	90%
+ additional \$2.20 per hour for all hours worked for all terms			

Apprentice Glazier Hi-Work One Year and 1500 hr. terms at the following percentage of Journeymans Hi-Work base wage.

1st	2nd	3rd	4th
50%	65%	75%	90%
+ additional \$3.52 per hour for all hours worked for all terms			

Supplemental Benefits per hour worked

Apprentice	
1st term	\$ 16.39
2nd-4th term	20.06
Apprentice High Work	
1st term	19.34
2nd-4th term	25.36

1-201

Insulator - Heat & Frost	11/01/2019
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JOB DESCRIPTION Insulator - Heat & Frost

DISTRICT 1

ENTIRE COUNTIES

Albany, Columbia, Delaware, Essex, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Sullivan, Ulster, Warren, Washington

WAGES

Wages per hour	07/01/2019	8/4/2019
Asbestos Worker*	\$ 36.04	\$ 35.62
Insulator*	36.04	35.62
Firestopping Worker*	30.64	30.28

(*)On Mechanical Systems only.

On government mandated shift work additional 12% of wage for all shifts starting after 3:30 P.M.

SUPPLEMENTAL BENEFITS

Per hour

Journeyman	\$ 21.94	\$ 22.36
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OVERTIME PAY

See (*B1, **Q) on OVERTIME PAGE

*B1=Double time begins after 10 hours on Saturday

**Q=Triple time on Labor Day if worked.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

When a holiday falls on Sunday the following Monday shall be observed as the holiday.

REGISTERED APPRENTICES

Wages per hour

one year terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th
60 %	70 %	80 %	90 %

Supplemental Benefits per hour worked:

Apprentices	\$ 21.94	\$ 22.36
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1-40

Ironworker

11/01/2019

JOB DESCRIPTION Ironworker

DISTRICT 1

ENTIRE COUNTIES

Albany, Clinton, Columbia, Delaware, Essex, Greene, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES

Fulton: Only the Townships of Broadalbin, Mayfield, Northampton, Perth, Bleecker and Johnstown.

Hamilton: Only the Townships of Hope, Benson and Wells.

Montgomery: Only the Townships of Florida, Amsterdam, Charleston, Glen, Mohawk and Root.

Otsego: Only the Towns of Unadilla, Butternuts, Morris, Otego, Oneonta, Laurens, Millford, Maryland and Worchester.

WAGES

Wages	07/01/2019
Per hour	

Ornamental	\$ 31.55
Reinforcing	31.55
Rodman	31.55
Structural & Precast	31.55
Mover/Rigger	31.55
Fence Erector	31.55
Stone Derrickman	31.55
Sheeter	31.80
Curtain Wall Installer	31.55
Metal Window Installer	31.55

SUPPLEMENTAL BENEFITS

Per hour

JOURNEYMAN \$ 28.81

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

Note: Any holiday which occurs on Sunday shall be observed the following Monday.

REGISTERED APPRENTICES

Wages per hour

ONE YEAR TERMS AT THE FOLLOWING WAGE RATES:

07/01/2019

1st year	\$ 16.50
2nd year	18.50
3rd year	20.50
4th year	22.50

Supplemental Benefits per hour worked

1st year	\$ 11.25
2nd year	22.39
3rd year	23.97
4th year	25.57

1-12

Laborer - Building

11/01/2019

JOB DESCRIPTION Laborer - Building

DISTRICT 7

ENTIRE COUNTIES

Clinton, Essex, Warren

WAGES

GROUP A: All Laborers (except as noted)

GROUP B: Asbestos & Hazardous Waste Work.

WAGES per hour

07/01/2019

Group A	\$ 24.33
Group B	25.83

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 22.45

OVERTIME PAY

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

Terms are at the following percentage of Group Rate A.

0-1,000 Hrs	1,001-2,000 Hrs	2,001-3,000 Hrs	3,001-4,000 Hrs
60%	70%	80%	90%

SUPPLEMENTAL BENEFITS per hour worked:

All Terms: Same as Journeyman

7-1822ew

Laborer - Heavy&Highway

11/01/2019

JOB DESCRIPTION Laborer - Heavy&Highway

DISTRICT 7

ENTIRE COUNTIES

Clinton, Essex, Warren

WAGES

Per hour:

GROUP A: Drill Helper, Flagmen, Outboard and Hand Boats.

GROUP B: BASIC RATE: Bull Float (where used for strike off only), Chain Saw, Concrete Aggregate Bin, Concrete Bootman, Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer, Pavement Breaker, Handlers of All Steel Mesh, Small Generators for Laborers' Tools, Installation of Bridge Drainage Pipe, Pipe Layers, Vibrator Type Rollers, Tamper, Drill Doctor, Water Pump Operator (1-1/2" and Single Diaphragm) Nozzle (Asphalt, Guniting, Seeding, and Sand Blasting), Laborers on Chain Link Fence Erection, Rock Splitter & Power Unit, Pusher Type Concrete Saw and All Other Gas, Electric, Oil, and Air Tool Operators, Wrecking Laborer.

GROUP C: Drilling Equipment - only where a separate air compressor unit supplies power, Acetylene Torch Operators, Asphalt Raker, Powder Man, Tail or Screw Operator on Asphalt Paver.

GROUP D: Blasters, Form Setters, Stone or Granite Curb Setters.

GROUP E: Hazardous Waste Removal Work when designated by State/Federal as hazardous waste site and regulations require employees wear required personal protection.

WAGES per hour	07/01/2019	07/01/2020 Additional	07/01/2021 Additional
Group # A	\$ 25.97	\$ 1.60	\$ 1.60
Group # B	26.17	1.60	1.60
Group # C	26.37	1.60	1.60
Group # D	26.57	1.60	1.60
Group # E	28.67	1.60	1.60

NOTE: A single irregular work shift starting any time between 5:00 PM and 1:00 AM on governmental mandated night work shall be paid an additional \$2.50 per hour.

IMPORTANT NOTE: Operation of all terrain forklifts or skid steers is the work of the Operating Engineers, please see appropriate rates.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 24.95

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

NOTE: If a holiday falls on Sunday, it will be celebrated on Monday. In the event that men work on this Sunday holiday, they shall be paid double time. In the event that men work on Monday, they shall be compensated at double time plus the holiday pay. Accordingly, the Monday following the Sunday is treated as the holiday.

REGISTERED APPRENTICES

WAGES: 1000 hour terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th
60%	70%	80%	90%

SUPPLEMENTAL BENEFITS per hour worked:

All Terms: Same as Journeyman

7-1822/2h

Laborer - Tunnel

11/01/2019

JOB DESCRIPTION Laborer - Tunnel

DISTRICT 7

ENTIRE COUNTIES

Clinton, Essex, Warren

WAGES

GROUP A: General Laborer

GROUP B: Change Houseman, Miners and all Machine Men, Safety Miner, all Shaft-work, Caisson work, Drilling, Blow Pipe, all Air Tools, Tugger, Scaling, Nipper, Guniting pot to nozzle, Bit Grinder, Signal Man (top and bottom), Concrete Men, Shield driven tunnels, mixed face and soft ground, liner plate tunnels in free air.

GROUP C: Hazardous/Waste Work

WAGES (per hour)

	07/01/2019	07/01/2020	07/01/2021
Tunnel Laborer:		Additional	Additional
Group A	\$ 29.15	\$ 1.60	\$ 1.60
Group B	29.35	1.60	1.60
Group C*	31.65	1.60	1.60

(*)Work site required to be designated by State/Federal as hazardous waste site and relevant regulations require employees to use personal protection.

Note - A single irregular work shift shall be paid an additional \$2.50 per hour.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 24.95

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

NOTE: If a holiday falls on Saturday, it will be celebrated on Friday. If a holiday falls on Sunday, it will be celebrated on Monday. In the event that men work on this Sunday holiday, they shall be paid double time. In the event that men work on Monday, they shall be compensated at double time plus the holiday pay. Accordingly, the Monday following the Sunday is treated as the holiday.

REGISTERED APPRENTICES

Wages per hour

Terms are at the following percentage of Group B rate.

0-1000 Hrs	1001-2000 Hrs	2001-3000 Hrs	3001-4000 Hrs
60%	70%	80%	90%

SUPPLEMENTAL BENEFITS

All Terms: Same as Journeyman

7-1822T

Lineman Electrician

11/01/2019

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:

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines

Below 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. (Ref #14.01.01)

	07/01/2019	05/04/2020
Lineman, Technician	\$ 52.05	\$ 53.50
Crane, Crawler Backhoe	52.05	53.50
Welder, Cable Splicer	52.05	53.50
Digging Mach. Operator	46.85	48.15
Tractor Trailer Driver	44.24	45.48
Groundman, Truck Driver	41.64	42.80

Equipment Mechanic	41.64	42.80
Flagman	31.23	32.10

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all electrical sub-stations, switching structures, fiber optic cable and all other work not defined as "Utility outside electrical work". (Ref #14.02.01-A)

Lineman, Technician	\$ 52.05	\$ 53.50
Crane, Crawler Backhoe	52.05	53.50
Cable Splicer	57.26	58.85
Certified Welder -		
Pipe Type Cable	54.65	56.18
Digging Mach. Operator	46.85	48.15
Tractor Trailer Driver	44.24	45.48
Groundman, Truck Driver	41.64	42.80
Equipment Mechanic	41.64	42.80
Flagman	31.23	32.10

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates apply on switching structures, maintenance projects, railroad catenary install/maintenance third rail installation, bonding of rails and pipe type cable and installation of fiber optic cable. (Ref #14.02.01-B)

Lineman, Tech, Welder	\$ 53.37	\$ 54.82
Crane, Crawler Backhoe	53.37	54.82
Cable Splicer	58.71	60.30
Certified Welder -		
Pipe Type Cable	56.04	57.56
Digging Mach. Operator	48.03	49.34
Tractor Trailer Driver	45.36	46.60
Groundman, Truck Driver	42.70	43.86
Equipment Mechanic	42.70	43.86
Flagman	32.02	32.89

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all overhead and underground 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. (Ref #14.03.01)

Lineman, Tech, Welder	\$ 54.56	\$ 56.01
Crane, Crawler Backhoe	54.56	56.01
Cable Splicer	54.56	56.01
Digging Mach. Operator	49.10	50.41
Tractor Trailer Driver	46.38	47.61
Groundman, Truck Driver	43.65	44.81
Equipment Mechanic	43.65	44.81
Flagman	32.74	33.61

Additional \$1.00 per hour for entire crew when a helicopter is used.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE 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 %

**** IMPORTANT NOTICE ****

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

*Effective 05/06/2013, Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked (also required on non-worked holidays):

The following SUPPLEMENTAL BENEFITS apply to all classification categories of CONSTRUCTION, TRANSMISSION and DISTRIBUTION.

Journeyman	\$ 24.15 *plus 6.75% of hourly wage	\$ 24.90 *plus 6.75% of hourly wage
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*The 6.75% 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: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.
Overtime	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES

WAGES: 1000 hour terms at the following percentage of the applicable Journeyman Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS: Same as Journeyman

6-1249a

Lineman Electrician - Teledata

11/01/2019

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 outside work, stopping at first point of attachment (demarcation).

	07/01/2019	01/01/2020	01/01/2021
Cable Splicer	\$ 32.78	\$ 33.77	\$ 34.78
Installer, Repairman	\$ 31.12	\$ 32.05	\$ 33.01
Teledata Lineman	\$ 31.12	\$ 32.05	\$ 33.01
Tech., Equip. Operator	\$ 31.12	\$ 32.05	\$ 33.01
Groundman	\$ 16.49	\$ 16.99	\$ 17.50

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work please see LINEMAN.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED:

1ST SHIFT	REGULAR RATE
2ND SHIFT	REGULAR RATE PLUS 10%
3RD SHIFT	REGULAR RATE PLUS 15%

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman	\$ 4.73 *plus 3% of wage paid	\$ 4.73 *plus 3% of wage paid	\$ 4.73 *plus 3% of wage paid
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*The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked.
Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

Lineman Electrician - Traffic Signal, Lighting

11/01/2019

JOB DESCRIPTION Lineman Electrician - Traffic Signal, Lighting

DISTRICT 6

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Cortland, Delaware, 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, Sullivan, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

WAGES

Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors which includes, but is not limited to road loop wires; conduit and plastic or other type pipes that carry conductors, flex cables and connectors, and to oversee the encasement or burial of such conduits or pipes.

A Groundman/Groundman Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/groundman truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.
(Ref #14.01.01)

Per hour:

07/01/2019 05/04/2020

Lineman, Technician	\$ 45.00	\$ 46.20
Crane, Crawler Backhoe	45.00	46.20
Certified Welder	47.25	48.51
Digging Machine	40.50	41.58
Tractor Trailer Driver	38.25	39.27
Groundman, Truck Driver	36.00	36.96
Equipment Mechanic	36.00	36.96
Flagman	27.00	27.72

Above rates applicable on all Lighting and Traffic Signal Systems with 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.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE 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%

** IMPORTANT NOTICE **

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

*Effective 05/06/2013, Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked (but also required on non-worked holidays):

Journeyman	\$ 24.15 *plus 6.75% of hourly wage	\$ 24.90 *plus 6.75% of hourly wage
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*The 6.75% is based on the hourly wage paid, straight time rate or premium rate.
Supplements paid at STRAIGHT TIME rate for holidays.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE. *Note* Double time for all emergency work designated by the Dept. of Jurisdiction.

NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked.
Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid: See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

Overtime: See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES

WAGES: Per hour. 1000 hour terms.

	07/01/2019	05/04/2020
1st term	\$ 27.00	\$ 27.72
2nd term	29.25	30.03
3rd term	31.50	32.34
4th term	33.75	34.65
5th term	36.00	36.96
6th term	38.25	39.27
7th term	40.50	41.58

SUPPLEMENTAL BENEFITS: Same as Journeyman

6-1249a-LT

Lineman Electrician - Tree Trimmer

11/01/2019

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 energized overhead or underground electrical, telephone and CATV lines. This also would include stump removal near underground energized electrical lines, including telephone and CATV lines.

07/01/2019

Tree Trimmer	\$ 25.79
Equipment Operator	22.81
Equipment Mechanic	22.81
Truck Driver	18.99
Groundman	15.64
Flag person	11.27

SUPPLEMENTAL BENEFITS

Per hour worked (but also required on non-worked holidays):

Journeyman	\$ 9.98 *plus 3% of hourly wage
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* The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked.
Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid: See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE

NOTE: All paid holidays falling on a Saturday shall be observed on the preceding Friday.
All paid holidays falling on a Sunday shall be observed on the following Monday.

6-1249TT

Mason - Building

11/01/2019

JOB DESCRIPTION Mason - Building

DISTRICT 12

ENTIRE COUNTIES

Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES

Per hour 07/01/2019

Tile/Marble/Terrazzo

Setter \$ 35.46
Finisher 27.71

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman Setter \$ 19.98
Journeyman Finisher 17.24

OVERTIME PAY

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

Hour Terms at the following percentage of Journeyman's wage

Setter:
1st term 0-500 hrs 60%
2nd term 501-1500 hrs 70%
3rd term 1501-2500 hrs 80%
4th term 2501-3500 hrs 85%
5th term 3501-4500 hrs 90%
6th term 4501-6000 hrs 95%

Finisher:
1st term 0-500 hrs 70%
2nd term 501-1500 hrs 80%
3rd term 1501-2500 hrs 90%
4th term 2501-3700 hrs 95%

Supplemental Benefits per hour worked

07/01/2019

Setter:
1st term 0-500 hrs \$ 11.63
2nd term 501-1500 hrs 11.63
3rd term 1501-2500 hrs 15.85
4th term 2501-3500 hrs 15.85
5th term 3501-4500 hrs 17.97
6th term 4501-6000 hrs 19.98

Finisher:	
1st term 0-500 hrs	\$ 11.09
2nd term 501-1500 hrs	11.09
3rd term 1501-2500 hrs	14.21
4th term 2501-3700 hrs	14.21

12-2TS.1

Mason - Building**11/01/2019**

JOB DESCRIPTION Mason - Building**DISTRICT** 12**ENTIRE COUNTIES**

Clinton, Essex, Franklin

PARTIAL COUNTIES

Warren: Only the Townships of Chester, Hague, Horicon and Johnsburg.

WAGES

Per hour 07/01/2019

Bricklayer	\$ 32.84
Cement Finisher	32.84
Plasterer/Fireproofers*	32.84
Pointer/Caulker/Cleaner	32.84
Stone Mason	32.84
Acid Brick	33.84

(*)Fireproofers on Structural only.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman \$ 19.62

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

Note: Any holiday which occurs on Sunday shall be observed the following Monday.

REGISTERED APPRENTICES

Wages per hour

750 hr terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
55%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

0-500 Hours	\$ 11.77
All others	\$ 19.62

12-2b.8

Mason - Heavy&Highway**11/01/2019**

JOB DESCRIPTION Mason - Heavy&Highway**DISTRICT** 12**ENTIRE COUNTIES**

Albany, Cayuga, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Madison, Montgomery, Oneida, Oswego, Rensselaer, Saratoga, Schenectady, Schoharie, St. Lawrence, Warren, Washington

PARTIAL COUNTIES

Onondaga: For Heavy & Highway Cement Mason or Plaster Work in Onondaga County, refer to Mason-Heavy&Highway tag 1-2h/h on.

WAGES

Per hour

07/01/2019

Mason &
Bricklayer

\$38.24

Additional \$1.00 per hour for work on any swing scaffold or staging suspended by means of ropes or cables.

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman

\$ 19.90

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

Note: If a holiday falls on Sunday, the Monday following shall constitute the day of the legal holiday.

REGISTERED APPRENTICES

Wages per hour

750 HR TERMS at the following percent of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
55%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

\$ 19.90

12-2hh.1

Millwright

11/01/2019

JOB DESCRIPTION Millwright

DISTRICT 2

ENTIRE COUNTIES

Clinton, Essex, Franklin, Hamilton, Jefferson, Lewis, Oneida, Onondaga, Oswego, St. Lawrence, Warren, Washington

WAGES

Per hour:	07/01/2019	07/01/2020
		Additional
Building	\$ 28.59	\$ 1.25
Heavy & Highway	30.59	1.25

NOTE ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):

- Certified Welders shall receive \$1.75 per hour in addition to the current Millwrights rate provided he/she is directed to perform certified welding.

- For Building work if a work site has been declared a hazardous site by the Owner and the use of protective gear (including, as a minimum, air purifying canister-type chemical respirators) are required, then that employee shall receive a \$1.50 premium per hour for Building work.

- For Heavy & Highway work if the work is performed at a State or Federally designated hazardous waste site where employees are required to wear protective gear, the employees performing the work shall receive an additional \$2.00 per hour over the millwright heavy and highway wage rate for all hours worked on the day protective gear was worn.

- An employee performing the work of a machinist shall receive \$2.00 per hour in addition to the current Millwrights rate. For the purposes of this premium to apply, a "machinist" is a person who uses a lathe, Bridgeport, milling machine or similar type of tool to make or modify parts.

- When performing work underground at 500 feet and below, the employee shall receive an additional \$0.50. This amount will increase to \$1.00 on 7/1/2020.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman

\$ 23.30

OVERTIME PAY

See (B, E, *E2, Q) on OVERTIME PAGE

*Note - Saturday may be used as a make-up day and worked at the straight time rate of pay during a work week when conditions such as weather, power failure, fire, or natural disaster prevent the performance of work on a regular scheduled work day.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

Note: Any holiday that falls on Sunday shall be observed the following Monday. Any holiday that falls on Saturday shall be observed the preceding Friday.

REGISTERED APPRENTICES

Wages per hour:

(1)year terms at the following percentage of journeymans rate.

1st	2nd	3rd	4th
60%	70%	80%	90%

Supplemental Benefits per hour:

Apprentices:

1st term	\$ 10.60
2nd term	19.49
3rd term	20.76
4th term	22.03

2-1163.2

Operating Engineer - Building

11/01/2019

JOB DESCRIPTION Operating Engineer - Building

DISTRICT 1

ENTIRE COUNTIES

Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES

Dutchess: Defined as north of the northern boundary line of City of Poughkeepsie then due east to 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 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.

WAGES

CLASS A1:

Crane, hydraulic cranes, tower crane, locomotive crane, piledriver, cableway, derricks, whirllies, dragline, boom trucks over 5 tons.

CLASS A:

Shovel, all Excavators (including rubber tire full swing), 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, and tractor road paver, boom trucks 5 tons and under, maintenance engineer, self-contained crawler drill-hydraulic rock drill.

CLASS B:

Backhoes (rubber tired backhoe/loader combination), bulldozer, pushcat, tractor, traxcavator, scraper, LeTourneau grader, form fine grader, self-propelled soil compactor (fill roller), asphalt roller, blacktop spreader, power brooms, sweepers, trenching machine, Barber Green loader, side booms, hydro hammer, concrete spreader, concrete finishing machine, one drum hoist, power hoisting (single drum), hoist two drum or more, three drum engine, power hoisting (two drum and over), two drum and swinging engine, three drum swinging engine, hod hoist, A-L frame winches, core and well drillers (one drum), post hole digger, model CHB Vibro-Tamp or similar machine, batch bin and plant operator, dinky locomotive, skid steer loader, track excavator 5/8 cubic yard or smaller, front end rubber tired loader under four cubic yards, vacuum machine (mounted or towed).

CLASS C:

Fork lift, high lift, all terrain fork lift: or similar, oiler, fireman and heavy-duty greaser, boilers and steam generators, pump, vibrator, motor mixer, air compressor, dust collector, welding machine, well point, mechanical heater, generators, temporary light plants, electric submersible pumps 4" and over, murphy type diesel generator, conveyor, elevators, concrete mixer, belcrete power pack (belcrete system), seeding, and mulching machines, pumps.

* 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

	07/01/2019	07/01/2020	07/01/2021
Class # A1	\$ 44.68	45.67	46.71
Class # A	44.19	45.18	46.22
Class # B	43.17	44.16	45.20
Class # C	40.27	41.26	42.30

Additional \$0.50 per hr for Tower Cranes.

Additional \$1.25 per hr for Cranes with Boom length & jib 150ft. and over.

Additional \$2.25 per hr for Cranes with Boom length & jib 200ft. and over.

Additional \$2.50 per hr over B rate for Nuclear Leader work.

Additional \$0.40 per hr for tunnel or excavation of shaft 40" or more deep.

Additional \$2.50 per hour if work requires Personal Protective Equipment for hazardous waste site activities with a level C or over rating.

SUPPLEMENTAL BENEFITS

Per hour

	07/01/2019	07/01/2020	07/01/2021
Journeyman	\$ 27.10	28.25	29.40

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

Note: If a holiday falls on Sunday, it will be celebrated on Monday. If the holiday falls on Saturday, it will be celebrated on Friday.

Employees who work a Saturday holiday shall be paid double time plus 8 hours of straight time.

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 worked

	07/01/2019	07/01/2020	07/01/2021
All terms	\$ 22.40	23.55	24.70

1-158 Alb

Operating Engineer - Heavy&Highway

11/01/2019

JOB DESCRIPTION Operating Engineer - Heavy&Highway

DISTRICT 1

ENTIRE COUNTIES

Albany, Broome, Chenango, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schoenectady, Schoharie, Tioga, Warren, Washington

PARTIAL COUNTIES

Dutchess: Defined as north of the northern boundary line of City of Poughkeepsie then due east to 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 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.

WAGES

CLASSIFICATION A:

Asphalt Curb Machine (Self Propelled, Slipform), Asphalt Paver, Automated Concrete Spreader (CMI Type), Automatic Fine Grader, Backhoe (Except Tractor Mounted, Rubber Tired), Backhoe Excavator Full Swing (CAT 212 or similar type), Back Filling Machine, Belt Placer (CMI Type), Blacktop Plant (Automated), Boom truck, GPS operated Bull Dozer, Cableway, Caisson Auger, Central Mix Concrete Plant (Automated), Concrete Curb Machine (Self Propelled, Slipform), Concrete Pump, Crane, Cherry Picker, Derricks (steel erection), Dragline, Overhead Crane (Gantry or Straddle type), Pile Driver, Truck Crane, Directional Drilling Machine, Dredge, Dual Drum Paver, Excavator (All PurposeHydraulically Operated) (Gradall or Similar), Front End Loader (4 cu. yd. and Over), Head Tower (Sauerman or Equal), Hoist (Two or Three Drum), Holland Loader, Maintenance Engineer, Mine Hoist, Mucking Machine or Mole, Pavement Breaker(SP) Wertgen; PB-4 and similar type, Power Grader, Profiler (over 105 H.P.), Quad 9, Quarry Master (or equivalent), Scraper, Shovel, Side Boom, Slip Form Paver (If a second man is needed, he shall be an Oiler), Tractor Drawn BeltType Loader, Truck or Trailer Mounted Log Chipper (Self Feeder), Tug Operator (Manned Rented Equipment Excluded), Tunnel Shovel

CLASSIFICATION B:

Backhoe (Tractor Mounted, Rubber Tired), Bituminous Recycler Machine, Bituminous Spreader and Mixer, Blacktop Plant (NonAutomated), Blast or Rotary Drill (Truck or Tractor Mounted), Brokk, Boring Machine, Cage Hoist, Central Mix Plant [(NonAutomated) and All Concrete Batching Plants], Concrete Paver (Over 16S), Crawler Drill (Self-contained), Crusher, Diesel Power Unit, Drill Rigs, Tractor Mounted, Front End Loader (Under 4 cu. yd.), Greaseman/Lubrication Engineer, HiPressure Boiler (15 lbs. and over), Hoist (One Drum), Hydro-Axe, Kolman Plant Loader and Similar Type Loaders (If Employer requires another man to clean the screen or to maintain the equipment, he shall be an Oiler), L.C.M. Work Boat Operator, Locomotive, Material handling knuckle boom, Mini Excavator (under 18,000 lbs.), Mixer (for stabilized base selfpropelled), Monorail Machine, Plant Engineer, Prentice Loader, Profiler (105 H.P. and under), Pug Mill, Pump Crete, Ready Mix Concrete Plant, Refrigeration Equipment (for soil stabilization), Road Widener, Roller (all above subgrade), Sea Mule, Self-contained Ride-on Rock Drill(Excluding Air-Track Type Drill), Skidder, Tractor with Dozer and/or Pusher, Trencher, Tugger Hoist, Vacuum machine (mounted or towed), Vermeer saw (ride on, any size or type), Welder

CLASSIFICATION C:

A Frame Winch Hoist on Truck, Articulated Heavy Hauler, Aggregate Plant, Asphalt or Concrete Grooving Machine (ride on), Ballast Regulator(Ride-on), Boiler (used in conjunction with production), Bituminous Heater (self-propelled), Boat (powered), Cement and Bin Operator, Concrete Pavement Spreader and Finisher Concrete Paver or Mixer (16' and under), Concrete Saw (self-propelled), Conveyor, Deck Hand, Directional Drill Machine Locator, Drill (Core and Well), Farm Tractor with accessories, Fine Grade Machine, Fireman, Fork Lift, Form Tamper, Grout Pump, Gunit Machine, Hammers (Hydraulic self-propelled), Hydra-Spiker (ride-on), Hydraulic Pump (jacking system), Hydro-Blaster (Water), Mulching Machine, Oiler, Parapet Concrete or Pavement Grinder, Post Hole Digger and Post Driver, Power Broom (towed), Power Heaterman, Power Sweeper, Revinus Widener, Roller (Grade and Fill), Scarifier (ride-on), Shell Winder, Skid steer loader (Bobcat or similar), Span-Saw (ride-on), Steam Cleaner, Tamper (ride-on), Tie Extractor (ride-on), Tie Handler (ride-on), Tie Inserter (ride-on), Tie Spacer (ride-on), Tire Repair, Track Liner (ride-on), Tractor, Tractor (with towed accessories), Vibratory Compactor, Vibro Tamp, Well Point, and the following hands-off equipment: Compressors, Dust Collectors, Generators, Pumps, Welding Machines, Light Plants and Heaters

- Note for all above classifications of Operating Engineer - 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

	07/01/2019	07/01/2020 Additional	07/01/2021 Additional
Master Mechanic	\$ 46.43	\$ 2.60	\$ 2.70
Class A*	44.82		
Class B	43.91		
Class C	41.34		

Additional \$2.50 per hour for All Employees who work a single irregular work shift starting from 5:00 PM to 1:00 AM that is mandated by the Contracting Agency.

Additional \$2.50 per hr. for hazardous waste removal work on State and/or Federally designated waste site which require employees to wear Level C or above forms of personal protection.

(*) Premiums for CRANES is based upon Class A rates with the following premiums:

- Additional \$4.00 per hr for Tower Cranes, including self erecting.
- Additional \$3.00 per hr for Lattice Boom Cranes and all other cranes with a manufacturers rating of fifty (50) tons and over.
- Additional \$2.00 per hr for all Hydraulic Cranes and Derricks with a manufacturer's rating of 49 ton and below, including boom trucks.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour

Journeyman \$ 27.30

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

Note: If the holiday falls on Sunday, it will be celebrated on Monday. If the holiday falls on a Saturday, it will be celebrated on Saturday.

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 worked

	07/01/2019
All Terms	\$ 22.70

1-158H/H Alb

JOB DESCRIPTION Operating Engineer - Marine Dredging

DISTRICT 4

ENTIRE COUNTIES

Albany, Bronx, Cayuga, Chautauqua, Clinton, Columbia, Dutchess, Erie, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Niagara, Orange, Orleans, Oswego, Putnam, Queens, Rensselaer, Richmond, Rockland, St. Lawrence, Suffolk, Ulster, Washington, Wayne, Westchester

WAGES

These wages do not apply to Operating Engineers on land based construction projects. For those projects, please see the Operating Engineer Heavy/Highway Rates. The wage rates below for all equipment and operators are only for marine dredging work in navigable waters found in the counties listed above.

Per Hour:	07/01/2019	10/01/2019
CLASS A1 Deck Captain, Leverman Mechanical Dredge Operator Licensed Tug Operator 1000HP or more.	\$ 39.23	\$ 40.31
CLASS A2 Crane Operator (360 swing)	34.96	35.92
CLASS B Dozer, Front Loader Operator on Land	To conform to Operating Engineer Prevailing Wage in locality where work is being performed including benefits.	
CLASS B1 Derrick Operator (180 swing) Spider/Spill Barge Operator Operator II, Fill Placer, Engineer, Chief Mate, Electrician, Chief Welder, Maintenance Engineer Licensed Boat, Crew Boat Operator	33.93	34.86
CLASS B2 Certified Welder	31.94	32.82
CLASS C1 Drag Barge Operator, Steward, Mate, Assistant Fill Placer	31.07	31.92
CLASS C2 Boat Operator	30.06	30.89
CLASS D Shoreman, Deckhand, Oiler, Rodman, Scowman, Cook, Messman, Porter/Janitor	24.97	25.66

SUPPLEMENTAL BENEFITS

Per Hour:

THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

All Classes A & B	07/01/2019 \$11.23 plus 7.5% of straight time wage, Overtime hours add \$ 0.63	10/01/2019 \$11.88 plus 7.5% of straight time wage, Overtime hours add \$ 0.63
All Class C	\$10.93 plus 7.5% of straight time wage, Overtime hours add \$ 0.48	11.58 plus 7.5% of straight time wage, Overtime hours add \$ 0.48
All Class D	\$10.63 plus 7.5% of straight time wage, Overtime hours	11.28 plus 7.5% of straight time wage, Overtime hours

add \$ 0.33

add \$ 0.33

OVERTIME PAY

See (B2, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 15, 26) on HOLIDAY PAGE

4-25a-MarDredge

Operating Engineer - Survey Crew

11/01/2019

JOB DESCRIPTION Operating Engineer - Survey Crew

DISTRICT 12

ENTIRE COUNTIES

Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES

Dutchess: The northern portion of the county from the northern boundary line of the City of Poughkeepsie, north.

Genesee: Only the portion of the county that lies east of a line down the center of Route 98 to include all area that lies within the City of Batavia.

WAGES

These rates apply to Building, Tunnel and Heavy Highway.

Per hour:

SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party.

Instrument Person - One who operates the surveying instruments.

Rod Person - One who holds the rods and assists the Instrument Person.

07/01/2019

Party Chief	\$ 41.51
Instrument Person	39.15
Rod Person	27.10

Additional \$3.00/hr. for Tunnel Work

Additional \$2.50/hr. for Hazardous Work Site

SUPPLEMENTAL BENEFITS

Per hour worked:

Journeyman	\$ 26.80
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OVERTIME PAY

See (B, E, P, T) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES: 1000 hour terms based on the Percentage of Rod Persons Wage:

07/01/2019

0-1000	60%
1001-2000	70%
2001-3000	80%

SUPPLEMENTAL BENEFIT per hour worked:

0-1000	\$ 16.21
1001-2000	18.92
2001-3000	21.63

12-158-545 D.H.H.

Operating Engineer - Survey Crew - Consulting Engineer

11/01/2019

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer

DISTRICT 12

ENTIRE COUNTIES

Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES

Dutchess: The northern portion of the county from the northern boundary line of the City of Poughkeepsie, north.

Genesee: Only the portion of the county that lies east of a line down the center of Route 98 to include all area that lies within the City of Batavia.

WAGES

These rates apply to feasibility and preliminary design surveying, line and grade surveying for inspection or supervision of construction when performed under a Consulting Engineer Agreement.

Per hour:

SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party.

Instrument Person - One who operates the surveying instruments.

Rod Person - One who holds the rods and assists the Instrument Person.

07/01/2019

Party Chief	\$ 42.86
Instrument Person	39.37
Rod Person	29.14

Additional \$3.00/hr. for Tunnel Work.

Additional \$2.50/hr. for EPA or DEC certified toxic or hazardous waste work.

SUPPLEMENTAL BENEFITS

Per hour worked:

Journeyman	\$ 25.60
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OVERTIME PAY

See (B, E, P, T) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES: 1000 hour terms based on percentage of Rod Persons Wage:

07/01/2019

0-1000	60%
1001-2000	70%
2001-3000	80%

SUPPLEMENTAL BENEFIT per hour worked:

0-1000	\$ 17.43
1001-2000	\$ 20.35
2001-3000	\$ 23.26

12-158-545 DCE

Operating Engineer - Tunnel

11/01/2019

JOB DESCRIPTION Operating Engineer - Tunnel

DISTRICT 7

ENTIRE COUNTIES

Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES

Dutchess: Northern part of Dutchess to the northern boundary line of the City of Poughkeepsie then due east to 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 east to Rte. 343 then along Rte. 343 east to the northern boundary of the Town of Dover Plains and east along the northern boundary of the Town of Dover Plains to Connecticut.

Genesee: Only that portion of the county that lies east of a line drawn down the center of Route 98 and the entirety of the City of Batavia.

WAGES

CLASS A: Automatic Concrete Spreader (CMI Type); Automatic Fine Grader; Backhoe (except tractor mounted, rubber tired); Belt Placer (CMI Type); Blacktop Plant (automated); Cableway; Caisson Auger; Central Mix Concrete Plant (automated); Concrete Curb Machine (self-propelled slipform); Concrete Pump (8" or over); Dredge; Dual Drum Paver; Excavator; Front End Loader (4 cu. yd & over); Gradall; Head Tower (Sauerman or Equal); Hoist (shaft); Hoist (two or three Drum); Log Chipper/Loader (self-feeder); Maintenance Engineer (shaft and tunnel); any Mechanical Shaft Drill; Mine Hoist; Mining Machine (Mole and similar types); Mucking Machine or Mole; Overhead Crane (Gantry or Straddle Type); Pile Driver; Power Grader; Remote Controlled Mole or Tunnel Machine; Scraper; Shovel; Side Boom; Slip Form Paver (If a second man is needed, they shall be an Oiler); Tripper/Maintenance Engineer (shaft & tunnel); Tractor Drawn Belt-Type Loader; Tug Operator (manned rented equipment excluded); Tunnel Shovel

CLASS B: Automated Central Mix Concrete Plant; Backhoe (topside); Backhoe (track mounted, rubber tired); Backhoe (topside); Bituminous Spreader and 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; Compressors (4 or less exceeding 2,000 c.f.m. combined capacity); Concrete Pump; Crusher; Diesel Power Unit; Drill Rigs (tractor mounted); Front End Loader (under 4 cu. yd.); Grayco Epoxy Machine; Hoist (One Drum); Hoist (2 or 3 drum topside); Knuckle Boom material handler; Kolman Plant Loader & similar type Loaders (if employer requires another person to clean the screen or to maintain the equipment, they shall be an Oiler); L.C.M. Work Boat Operator; Locomotive; Maintenance Engineer (topside); Maintenance Grease Man; Mixer (for stabilized base-self propelled); Monorail Machine; Plant Engineer; Personnel Hoist; Pump Crete; Ready Mix Concrete Plant; Refrigeration Equipment (for soil stabilization); Road Widener; Roller (all above sub-grade); Sea Mule; Shotcrete Machine; Shovel (topside); Tractor with Dozer and/or Pusher; Trencher; Tugger Hoist; Tunnel Locomotive; Welder; Winch; Winch Cat

CLASS C: A Frame Truck; All Terrain Telescoping Material Handler; Ballast Regulator (ride-on); Compressors (4 not to exceed 2,000 c.f.m. combined capacity; or 3 or less with more than 1200 c.f.m. but not to exceed 2,000 c.f.m.); Compressors ((any size, but subject to other provisions for compressors), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (4 or any type combination)); Concrete Pavement Spreaders and Finishers; Conveyor; Drill (core); Drill (well); Electric Pump used in conjunction with Well Point System; Farm Tractor with Accessories; Fine Grade Machine; Fork Lift; Grout Pump (over 5 cu. ft.); Gunite Machine; Hammers (hydraulic-self-propelled); Hydra-Spiker (ride-on); Hydra-Blaster (water); Hydro-Blaster; Motorized Form Carrier; Post Hole Digger and Post Driver; Power Sweeper; Roller grade & fill); Scarifer (ride-on); Span-Saw (ride-on); Submersible Electric Pump (when used in lieu of well points); Tamper (ride-on); Tie-Extractor (ride-on), Tie Handler (ride-on), Tie Insertor (ride-on), Tie Spacer (ride-on); Track Liner (ride-on); Tractor with towed accessories; Vibratory Compactor; Vibro Tamp, Well Point

CLASS D: Aggregate Plant; Cement & Bin Operator; Compressors (3 or less not to exceed 1,200 c.f.m. combined capacity); Compressors ((any size, but subject to other provisions for compressors), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (3 or less or any type or combination)); Concrete Saw (self-propelled); Form Tamper; Greaseman; Hydraulic Pump (jacking system); Junior Engineer; Light Plants; Mulching Machine; Oiler; Parapet Concrete or Pavement Grinder; Power Broom (towed); Power Heaterman (when used for production); Revinus Widener; Shell Winder; Steam Cleaner; Tractor

WAGES per hour:

	07/01/2019	07/01/2020	07/01/2021	07/01/2022
Master Mechanic	\$ 48.00	\$ 49.45	\$ 51.00	\$ 52.60
CLASS A	45.59	47.04	48.59	50.19
CLASS B	44.37	45.82	47.37	48.97
CLASS C	41.58	43.03	44.58	46.18
CLASS D	38.57	40.02	41.57	43.17

Additional \$5.00 per hour for Hazardous Waste Work on a state or federally designated hazardous waste site where the Operating Engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin and eye protection. Fringe benefits will be paid at the hourly wage premium.

CRANES:

Crane 1: All cranes, including self-erecting to be paid \$4.00 per hour over the Class A rate.

Crane 2: All Lattice Boom Cranes and all cranes with a manufacturer's rating of fifty (50) ton and over to be paid \$3.00 per hour over Class A rate.

Crane 3: All hydraulic cranes and derricks with a manufacturer's rating of forty nine (49) ton and below, including boom trucks, to be paid \$2.00 per hour over Class A rate.

Crane 1	\$ 49.59	\$ 51.04	\$ 52.59	\$ 54.19
Crane 2	48.59	50.04	51.59	53.19
Crane 3	47.59	49.04	50.59	52.19

SUPPLEMENTAL BENEFITS

Per hour:

\$ 29.60	\$ 30.75	\$ 31.90	\$ 33.05
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OVERTIME PAY

See (B, B2, E, Q, X) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

If a holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES

WAGES:(1000) hours terms at the following percentage of Journeyman's wage.

1st term	60% of Class B
2nd term	65% of Class B
3rd term	70% of Class B
4th term	75% of Class B

SUPPLEMENTAL BENEFITS per hour paid: Same as Journeyman

7-158-832TL.

Painter

11/01/2019

JOB DESCRIPTION Painter

DISTRICT 1

ENTIRE COUNTIES

Albany, Essex, Fulton, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES

Per hour	07/01/2019	05/01/2020 Additional
Painter\Wallcover	\$ 29.09	\$1.50
Drywall Finishers	29.09	1.50
Spray Rate	29.09	1.50
Structural Steel*	30.09	1.50
Lead Abatement	30.09	1.50
Lead Abatement on Structural Steel	31.09	1.50

(*)Employees working on objects with the use of swing stage, boatswain chair, pick and cables only will be paid at Structural Steel rate.

Bridge Painter

See Bridge Painter rates for the following work:

All Bridges and Tanks

SUPPLEMENTAL BENEFITS

Per hour

Journeyman \$ 16.85

OVERTIME PAY

See (B, E2, H) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

Note: If the holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES

Wages per hour

1000 hour terms at the following percentage of Journeyman's base wage

1st	2nd	3rd	4th	5th	6th
45%	50%	60%	70%	80%	90%

Supplemental Benefits per hour worked

All Terms \$ 16.85

1-201-P

Painter - Bridge & Structural Steel

11/01/2019

JOB DESCRIPTION Painter - Bridge & Structural Steel

DISTRICT 8

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:

STEEL:

Bridge Painting: 07/01/2019

\$ 49.50

+ 6.38*

ADDITIONAL \$6.00 per hour for POWER TOOL/SPRAY, whether straight time or overtime.

NOTE: All premium wages are to be calculated on base rate per hour only.

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (no cap).

NOTE: Generally, 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:

Journeyworker: 07/01/2019

\$ 9.50

+26.05*

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (no cap).

OVERTIME PAY

See (A, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (4, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage - Per hour:

Apprentices: (1) year terms

07/01/2019

1st year \$ 23.13

2nd year 34.73

3rd year 46.30

Supplemental Benefits - Per hour:

1st year \$ 13.44

2nd year 20.16

3rd year 26.88

8-DC-9/806/155-BrSS

Painter - Line Striping

11/01/2019

JOB DESCRIPTION Painter - Line Striping

DISTRICT 8

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): 07/01/2019

Striping-Machine Operator* \$ 29.93

Linerman Thermoplastic \$ 36.06

Note: * Includes but is not limited to: Positioning of cones and directing of traffic using hand held devices. Excludes the Driver/Operator of equipment used in the maintenance and protection of traffic safety.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour paid: 07/01/2019
Journeyworker:

Striping-Machine operator \$ 7.44
Linerman Thermoplastic \$ 7.44

OVERTIME PAY

See (B, B2, E2, F, S) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 20) on HOLIDAY PAGE
Overtime: See (5, 20) on HOLIDAY PAGE

REGISTERED APPRENTICES

One (1) year terms at the following wage rates:

07/01/2019

1st term \$ 11.97
2nd term 17.96
3rd term 23.94

Supplemental Benefits per hour:

1st term \$ 7.44
2nd term 7.44
3rd term 7.44

8-1456-LS

Painter - Metal Polisher

11/01/2019

JOB DESCRIPTION Painter - Metal Polisher

DISTRICT 8

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

07/01/2019

Metal Polisher \$ 30.58
Metal Polisher* 31.53
Metal Polisher** 34.08

*Note: Applies on New Construction & complete renovation

** Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS

Per Hour: 07/01/2019

Journeyworker:
All classification \$ 7.72

OVERTIME PAY

See (B, E, P, 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

Wages per hour:

One (1) year term at the following wage rates:

07/01/2019

1st year	\$ 15.00
2nd year	15.00
3rd year	15.75

1st year*	\$ 17.39
2nd year*	17.44
3rd year*	18.29

1st year**	\$ 19.50
2nd year**	19.50
3rd year**	20.25

*Note: Applies on New Construction & complete renovation

** Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:

Per hour:

1st year	\$ 5.52
2nd year	5.52
3rd year	5.52

8-8A/28A-MP

Plumber

11/01/2019

JOB DESCRIPTION Plumber

DISTRICT 1

ENTIRE COUNTIES

Essex

PARTIAL COUNTIES

Franklin: Entire County except for the Village of Hogansburg and the St. Regis Indian Reservation.

Hamilton: The Townships of Long Lake and Indian Lake

WAGES

Per hour

07/01/2019

Plumber & Steamfitter	\$ 38.50
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SUPPLEMENTAL BENEFITS

Per hour

Journeyman	\$ 20.55 +10.43*
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* This portion of the benefit is subject to the SAME PREMIUM as shown for overtime and applicable to paid Holidays.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (22) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 23) on HOLIDAY PAGE

Note: Whenever a Holiday falls on a Saturday, the preceding day, Friday, shall be observed as the Holiday. If a Holiday falls on a Sunday, the following day, Monday shall be observed as the Holiday.

REGISTERED APPRENTICES

Wages per hour

One year terms at the following percentage of Journeyman's wage

1st yr	50%
2nd yr	60%
3rd yr	70%
4th yr	80%
5th yr	90%

Supplemental Benefits per hour worked

1st yr	\$ 17.63 + 5.22*
2nd yr	18.21 + 6.26*
3rd yr	18.80 + 7.30*
4th yr	19.38 + 8.34*
5th yr	19.97 + 9.39*

* This portion of the benefit is subject to the SAME PREMIUM as shown for overtime.

* This portion per hour paid.

1-773EF-SF

Roofer	11/01/2019
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JOB DESCRIPTION Roofer

DISTRICT 1

ENTIRE COUNTIES

Albany, Clinton, Columbia, Essex, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Warren, Washington

WAGES

Per hour

	07/01/2019	07/01/2020 Additional	07/01/2021 Additional
Roofer/Waterproofer	\$ 31.55	\$1.50	\$1.50
Asphalt Cold Process	32.05		
Fluid Applied Roof	32.05		
Pitch & Asbestos	33.55		

Shift Work:

On government mandated shift work starting after 12:00pm and before 4:00am workers shall be paid \$4.00 additional per hour

SUPPLEMENTAL BENEFITS

Per hour

Journeyman \$ 19.27

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

Note: When any Holiday falls on Saturday, the Friday before such Holiday shall be recognized as the legal Holiday. When a Holiday falls on Sunday, it shall be observed the following Monday.

REGISTERED APPRENTICES

Wages per hour

Apprentice terms at the following per cent of the Roofer/Waterproofer rate. For Pitch & Asbestos work, an additional \$2.00 must be paid in wages. For Asphalt Cold Process work and Fluid Applied Roof coating, an additional \$0.50 must be paid in the wages.

1st Term 58%
1500 hrs.

2nd Term 74%
1 yr. and 1500 hrs.

3rd Term 90%
1 yr. and 1050 hrs.

Supplemental Benefits per hour worked

1st Term	\$ 17.69
2nd Term	18.12
3rd Term	18.60

1-241

Sheetmetal Worker	11/01/2019
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JOB DESCRIPTION Sheetmetal Worker

DISTRICT 1

ENTIRE COUNTIES

Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES

Per hour

	07/01/2019	06/01/2020 Additional	06/01/2021 Additional
Sheetmetal Worker	\$33.16	\$ 1.75	\$ 1.75

All work requiring HAZWOPER Training additional \$1.00 per hour

SUPPLEMENTAL BENEFITS

Per hour

Journeyman	\$33.09
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OVERTIME PAY

See (B,E,E5,Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

When any holiday falls on Saturday, the Friday before such holiday shall be recognized as the legal holiday. Any holiday falling on Sunday, the following Monday shall be recognized as the legal holiday.

REGISTERED APPRENTICES

Wages per hour

6 Month Terms at the following rate:

1st term	\$18.44
2nd term	\$19.99
3rd term	\$20.77
4th term	\$21.55
5th term	\$20.34
6th term	\$21.35
7th term	\$23.04
8th term	\$24.73
9th term	\$26.41
10th term	\$28.10

Supplemental Benefits per hour worked

1st term	\$20.30
2nd term	20.88
3rd term	21.18
4th term	21.60
5th term	27.62
6th term	28.05
7th term	28.77
8th term	29.49
9th term	30.21
10th term	30.93

1-83

Sprinkler Fitter

11/01/2019

JOB DESCRIPTION Sprinkler Fitter

DISTRICT 1

ENTIRE COUNTIES

Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Washington, Wayne, Wyoming, Yates

WAGES

Per hour	07/01/2019
Sprinkler	\$ 34.91
Fitter	

SUPPLEMENTAL BENEFITS

Per hour

Journeyman	\$ 24.93
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OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

Note: When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

REGISTERED APPRENTICES

Wages per hour

For Apprentices HIRED ON OR AFTER 04/01/2010:

One Half Year terms at the following percentage of journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
45%	50%	55%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 9.18	\$ 9.22	\$ 17.89	\$ 17.93	\$ 18.48	\$ 18.52	\$ 18.57	\$ 18.61	\$ 18.66	\$ 18.70

For Apprentices HIRED ON OR AFTER 04/01/2013:

One Half Year terms at the following percentage of journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
45%	50%	55%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 8.27	\$ 8.27	\$ 18.04	\$ 18.04	\$ 18.29	\$ 18.29	\$ 18.29	\$ 18.29	\$ 18.29	\$ 18.29

1-669

Teamster - Building

11/01/2019

JOB DESCRIPTION Teamster - Building

DISTRICT 7

ENTIRE COUNTIES

Clinton, Essex, Franklin, Jefferson, St. Lawrence

PARTIAL COUNTIES

Lewis: Only the Townships of Croghan, Denmark, Diana, New Bremen, Harrisburg, Montague, Osceola and Pinckney.

Oswego: Only the Towns of Boylston, Redfield, and Sandy Creek.

Warren: Only the Townships of Hague, Horicon, Chester and Johnsburg.

WAGES

GROUP # 1: Fuel Trucks, Fork Lift (Warehouse & Storage Area Only), Bus, Warehouse, Yardman, Truck Helper, Pickups, Panel Truck, Flatbody Material Trucks (straight Jobs), Single axle Dump Trucks, Dumpsters, Material Checkers & Receivers, Greasers, Tiremen, Mechanic Helpers and Parts Chasers.

GROUP # 2: Tandems, Mechanics & Batch Trucks.

GROUP # 3: Semi Trailers, Low Boys, Asphalt Distributor Trucks, and Agitator Mixer Truck, Dump Crete Type Vehicles and 3 axle Dump trucks.

GROUP # 4: Asbestos Removal, Special earth moving Euclid type or similar off highway equip.(non self load.) Articulated and all-track dump trucks.

Wages per hour

07/01/2019

Building:

Group #1	\$ 23.58
Group #2	24.58
Group #3	24.68
Group #4	23.84

SUPPLEMENTAL BENEFITS

Per hour:

All groups \$ 21.51

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

7-687B

Teamster - Heavy&Highway

11/01/2019

JOB DESCRIPTION Teamster - Heavy&Highway

DISTRICT 7

ENTIRE COUNTIES

Clinton, Essex, Franklin, Jefferson, St. Lawrence

PARTIAL COUNTIES

Lewis: Only the Townships of Croghan, Denmark, Diana, New Bremen, Harrisburg, Montague, Osceola and Pinckney.

Oswego: Only the Towns of Boylston, Redfield, and Sandy Creek.

Warren: Only the Townships of Hague, Horicon, Chester and Johnsbury.

WAGES

GROUP 1: Warehousemen, Yardmen, Truck Helpers, Pickups, Panel Trucks, Flatboy Material Trucks(straight jobs), Single Axle Dump Trucks, Dumpsters, Material Checkers and Receivers, Greasers, Truck Tiremen, Mechanics Helpers and Parts Chasers. Fork Lift (storage & warehouse areas only) Tandems and Batch Trucks, Mechanics, Dispatcher. Semi-Trailers, Low-boy Trucks, Asphalt Distributor Trucks, and Agitator, Mixer Trucks and dumpcrete type vehicles, Truck Mechanic, Fuel Truck.

GROUP 2: Specialized Earth Moving Equipment, Euclid type, or similar off-highway where not self-loading, Straddle (Ross) Carrier, and self-contained concrete mobile truck. Off-highway Tandem Back-Dump, Twin Engine Equipment and Double-Hitched Equipment where not self-loading.

Per hour:

07/01/2019

Heavy/Highway:

Group #1 \$ 25.82

Group #2 26.04

Additional \$1.50 per hour for hazardous waste removal work on a City, County, and/or Federal Designated waste site and regulations require employee to use or wear respiratory protection.

For work bid on or after April 1, 1982 there shall be a 12 month carryover of the negotiated rate in effect at the time of the bid.

SUPPLEMENTAL BENEFITS

Per hour:

All classes \$ 23.52

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

NOTE: If a holiday falls on a Sunday, it will be celebrated on Monday.

7-687

Welder

11/01/2019

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 07/01/2019

Welder: To be paid the same rate of the mechanic performing the work.*

*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

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.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

- (AA) Time and one half of the hourly rate after 7 and one half hours per day
- (A) Time and one half of the hourly rate after 7 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
- (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
- (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
- (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
- (E5) Double time after 8 hours on Saturdays
- (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

- (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
- (U) Four times the hourly rate for Holidays
- (V) Including benefits at SAME PREMIUM as shown for overtime
- (W) Time and one half for benefits on all overtime hours.
- (X) Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)

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 |
| (27) | Memorial Day |
| (28) | Easter Sunday |



New York State Department of Labor - Bureau of Public Work
State Office Building Campus
Building 12 - Room 130
Albany, New York 12240

REQUEST FOR WAGE AND SUPPLEMENT INFORMATION

As Required by Articles 8 and 9 of the NYS 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 Only 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/Public 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 Mental Hygiene
Facilities Corp.

☐ 06 OTHER N.Y. STATE UNIT

☐ 07 City

☐ 08 Local School District

☐ 09 Special Local District, i.e.,
Fire, Sewer, Water District

☐ 10 Village

☐ 11 Town

☐ 12 County

☐ 13 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
☐ Fire Safety Director, NYC Only
- ☐ Guards, Watchmen
☐ Janitors, Porters, Cleaners, Elevator Operators
☐ Moving furniture and equipment
☐ Trash and refuse removal
☐ Window cleaners
☐ Other (Describe)

9. Has this project been reviewed for compliance with the Wicks Law involving separate bidding?

YES ☐ NO ☐

10. Name and Title of Requester

Signature



NEW YORK STATE DEPARTMENT OF LABOR
Bureau of Public Work - Debarment List

**LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE
AWARDED ANY PUBLIC WORK CONTRACT**

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

Debarment Database: To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: <https://applications.labor.ny.gov/EDList/searchPage.do>

For inquiries where WCB is listed as the "Agency", please call 1-866-546-9322

NYSDOL Bureau of Public Work Debarment List 08/29/2019

Article 8

AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	DOL	*****0996	A-1 CONSTRUCTION & RENOVATION INC		1973 81ST ST - SUITE A-5 BROOKLYN NY 11214	01/08/2015	01/08/2020
DOL	NYC		ABDUL KARIM		C/O NORTH AMERICAN IRON W 1560 DECATUR STREETRIDGEWOOD NY 11385	05/15/2015	05/15/2020
DOL	DOL	*****4539	ACCOMPLISHED WALL SYSTEMS INC		112 OSCAWANNA HEIGHTS RD PUTNAM VALLEY NY 10542	03/13/2015	03/12/2020
DOL	DOL	*****3344	ACT INC		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL	*****4018	ADIRONDACK BUILDING RESTORATION INC.		4156 WILSON ROAD EAST TABERG NY 13471	03/26/2019	03/26/2024
DOL	DOL	*****1687	ADVANCED SAFETY SPRINKLER INC		261 MILL ROAD P.O BOX 296EAST AURORA NY 14052	07/29/2015	07/29/2020
DOL	DOL	*****1687	ADVANCED SAFETY SPRINKLER INC		261 MILL ROAD P.O BOX 296EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	NYC	*****6775	ADVENTURE MASONRY CORP.		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	DOL		AJ TORCHIA		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL	*****3344	ALL CATASTROPHE CONSTRUCTION TEAM INC	ACT INC	6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL	*****8740	ALLSTATE ENVIRONMENTAL CORP		C/O JOSE MONTAS 27 BUTLER PLACEYONKERS NY 10710	03/18/2011	03/19/2020
DOL	DOL		AMADEO J TORCHIA	TORCHIA'S HOME IMPROVEMENT	10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL		ANGELO F COKER			12/04/2018	12/04/2023
DOL	NYC		ANISUL ISLAM		C/O RELIANCE GENERAL CONS 644 OCEAN PARKWAYBROOKLYN NY 11230	09/02/2015	09/02/2020
DOL	DOL		ANITA SALERNO		158 SOLAR ST SYRACUSE NY 13204	01/07/2019	01/07/2024
DOL	DA		ANTHONY CARDINALE		58-48 59TH STREET MASPETH NY 11378	05/16/2012	05/08/2020
DOL	DOL		ANTHONY J MINGARELLI JR		C/O T & T CONCRETE INC 2560 HAMBURG TURNPIKELACKAWANNA NY 14218	07/08/2015	07/08/2020
DOL	DOL		ANTHONY PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10323	01/23/2017	01/23/2022
DOL	DOL		ANTONIO ESTIVEZ		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3020	APCO CONTRACTING CORP		24 SOUTH MARYLAND AVENUE PORT WASHINGTON NY 11050	09/24/2012	09/02/2020
DOL	NYC	*****9232	ARKAY CONSTRUCTION INC		102-104 GREYLOCK AVENUE BELLEVILLE NJ 07109	07/15/2015	07/15/2020
DOL	NYC	*****4779	ASTORIA GENERAL CONTRACTING CORP		35-34 31ST STREET LONG ISLAND CITY NY 11106	09/02/2015	09/02/2020
DOL	NYC	*****7217	ASTRO COMMUNICATIONS OF NY CORP		79 ALEXANDER AVE- STE 36A BRONX NY 10454	10/30/2015	10/30/2020
DOL	NYC	*****6046	ATLANTIC SUN CONSTRUCTION CORP		58-46 59TH AVENUE MASPETH NY 11378	05/08/2015	05/08/2020
DOL	NYC	*****6683	ATLAS RESTORATION CORP.		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022
DOL	NYC		AUDLEY O'BRIEN		1273 NORTH AVENUE/#1 CP NEW ROCHELLE NY 10804	04/07/2015	04/07/2020
DOL	NYC	*****2591	AVI 212 INC.		260 CROPEY AVENUE APT 11GBROOKLYN NY 11214	10/30/2018	10/30/2023
DOL	DOL		AVIS R HILL		3510 HICKORY WALK LANE ELLENWOOD GA 32094	01/22/2015	01/22/2020
DOL	AG		AVTAR SINGH		116-24 127TH STREET SOUTH OZONE PARK NY 11420	12/22/2015	12/22/2020
DOL	AG		BALDEV SINGH		116-24 127TH STREET SOUTH OZONE PARK NY 11420	12/22/2015	12/22/2020

NYSDOL Bureau of Public Work Debarment List 08/29/2019

Article 8

DOL	NYC		BALWINDER SINGH		421 HUDSON ST SUITE C5NEW YORK NY 10014	02/20/2019	02/20/2024
DOL	DOL		BARBARA CASSIDY		7 BLENIS PLACE VALHALLA NY 10595	04/02/2015	04/02/2020
DOL	DOL		BARRY KINNEY		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	NYC	*****3915	BEACON RESTORATION INC		SUITE B-8 782 PELHAM PARKWAY SOUTHBRONX NY 10462	04/21/2016	04/21/2021
DOL	NYC	*****8416	BEAM CONSTRUCTION, INC.		50 MAIN ST WHITE PLAINS NY 10606	01/04/2019	01/04/2024
DOL	DOL		BIAGIO CANTISANI			06/12/2018	06/12/2023
DOL	DOL	*****4512	BOB BRUNO EXCAVATING, INC		5 MORNINGSIDE DR AUBURN NY 13021	05/28/2019	05/28/2024
DOL	DOL		BOGDAN MARKOVSKI		370 W. PLEASANTVIEW AVE SUITE 2.329HACKENSACK NJ 07601	02/11/2019	02/11/2024
DOL	DOL	*****8551	BRANDY'S MASONRY		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/2021
DOL	NYC	*****6555	BROOKLYN WELDING CORP		1273 NORTH AVENUE/ #1 CP NEW ROCHELLE NY 10804	04/07/2015	04/07/2020
DOL	DOL	*****1449	BRRESTORATION NY INC		140 ARCADIA AVENUE OSWEGO NY 13126	09/12/2016	09/12/2021
DOL	DOL		BRUCE MORSEY		C/O KENT HOLLOW SIDING LL 29A BRIDGE STREETNEW MILFORD CT 06776	01/15/2016	01/15/2021
DOL	DOL		BRUCE P. NASH JR.		5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	DOL	*****8809	C.B.E. CONTRACTING CORPORATION		310 MCGUINNESS BLVD GREENPOINT NY 11222	03/07/2017	03/07/2022
DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL		CANTISANI & ASSOCIATES LTD		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CANTISANI HOLDING LLC			06/12/2018	06/12/2023
DOL	DOL		CARIBBEAN POOLS		C/O DOUGLAS L MALARKEY 64 VICTORIA DRIVEBINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****3812	CARMODY "2" INC			06/12/2018	06/12/2023
DOL	DOL	*****1143	CARMODY BUILDING CORP	CARMODY CONTRACTIN G AND CARMODY CONTRACTIN G CORP.	442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY CONCRETE CORPORATION			06/12/2018	06/12/2023
DOL	DOL		CARMODY ENTERPRISES, LTD.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY INC		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3812	CARMODY INDUSTRIES INC			06/12/2018	06/12/2023
DOL	DOL		CARMODY MAINTENANCE CORPORATION		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY MASONRY CORP		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	NYC	*****9172	CASSIDY EXCAVATING INC		14 RAILROAD AVENUE VALHALLA NY 10595	05/15/2014	04/02/2020
DOL	DOL	*****8809	CBE CONTRACTING CORP		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	AG		CESAR J. AGUDELO		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023
DOL	DOL	*****7655	CHAMPION CONSTRUCTION SERVICES CORP		2131 SCHENECTADY AVENUE BROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	NYC		CHARLES CASSIDY JR		14 RAILROAD AVENUE VALHALLA NY 10595	05/15/2014	04/02/2020
DOL	DOL		CHARLES ZIMMER JR		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL		CHRISTINE J HEARNE		C/O CJ-HEARNE CONSTRUCTIO 131 PONCE DE LEON AVE NEATLANTA GA 30308	12/01/2015	12/01/2020

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DOL	DOL		CHRISTOPHER J MAINI		19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		CHRISTOPHER PAPASTEFANO A/K/A CHRIS PAPASTEFANO		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL	*****0671	CJ-HEARNE CONSTRUCTION CO		SUITE 204 131 PONCE DE LEON AVENUE ATLANTA GA 30308	12/01/2015	12/01/2020
DOL	DOL	*****1927	CONSTRUCTION PARTS WAREHOUSE, INC.	CPW	5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	NYC	*****2164	CREATIVE TRUCKING INC		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	DOL	*****2524	CSI ELECTRICAL & MECHANICAL INC		42-32 235TH ST DOUGLASTON NY 11363	01/14/2019	01/14/2024
DOL	DOL	*****7761	D L MALARKEY CONSTRUCTION		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****7888	D L MALARKEY CONSTRUCTION INC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****5629	DAKA PLUMBING AND HEATING LLC		2561 ROUTE 55 POUGHQUAG NY 12570	02/19/2016	02/19/2021
DOL	DOL		DANICA IVANOSKI		61 WILLET ST. PASSAIC NJ 07503	10/26/2016	10/26/2021
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2C SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL		DARYL T RIEKS		C/O RIEKS CONTRACTING LLC 4804 GAHWILER ROAD AUBURN NY 13021	05/01/2015	05/01/2020
DOL	NYC	*****7707	DASSLE CONTRACTING INC		213-37 39TH AVE/SUITE 120 BAYSIDE NY 11360	05/08/2015	05/08/2020
DOL	DOL		DAVID MARTINEZ		C/O EMPIRE TILE INC 6 TREMONT COURTHUNTINGTON STATION NY 11746	03/08/2016	03/08/2021
DOL	DOL		DEBBIE STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	AG		DEBRA MARTINEZ		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		DEDA GAZIVODAN		C/O DAKA PLUMBING AND H 2561 ROUTE 55POUGHQUAG NY 12570	02/19/2016	02/19/2021
DOL	DOL		DELPHI PAINTING & DECORATING CO INC		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL		DENNIS SCHWANDTNER		C/O YES SERVICE AND REPAIR 145 LODGE AVE HUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	DOL		DF CONTRACTORS OF ROCHESTER, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DF CONTRACTORS, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	NYC		DIMITRIOS KOUTSOUKOS		C/O ASTORIA GENERAL CONTRACTORS 35-34 31ST STREET LONG ISLAND CITY NY 11106	09/02/2015	09/02/2020
DOL	NYC		DIMITRIOS TSOUMAS		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022
DOL	DOL	*****3242	DONALD R. FORSAY	DF LAWN SERVICE	1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DONALD R. FORSAY		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DORIS SKODA		C/O APCO CONTRACTING CORP 24 SOUTH MARYLAND AVENUE PORT WASHINGTON NY 11050	09/24/2012	09/02/2020
DOL	NYC	*****7404	DOSANJH CONSTRUCTION CORP		9439 212TH STREET QUEENS VILLAGE NY 11428	02/25/2016	02/25/2021
DOL	DOL		DOUGLAS L MALARKEY	MALARKEY CONSTRUCTION	64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL		E C WEBB		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL		EARL L WILSON	WILSON BROTHER DRYWALL CONTRACTORS	36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	DOL		EAST COAST PAVING		2238 BAKER RD GILLET PA 16923	03/12/2018	03/12/2023
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTRACTORS		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/2002

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DOL	DOL	*****3270	EMPIRE TILE INC		6 TREMONT COURT HUNTINGTON STATION NY 11746	03/08/2016	03/08/2021
DOL	DOL	*****7403	F & B PAINTING CONTRACTING INC		2 PARKVIEW AVENUE HARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL		FAIGY LOWINGER		11 MOUNTAIN RD 28 VAN BUREN DR MONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL		FAY MATTHEW		C/O CHAMPION CONSTRUCTION 2131 SCHENECTADY AVENUE BROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	DOL		FAZIA GINA ALI-MOHAMMED	C/O CHAMPION CONSTRUCTION	2131 SCHENECTADY AVENUE BROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	DOL		FRANK BENEDETTO		19 CATLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		FRANK BENEDETTO		C/O F & B PAINTING CONTRA 2 PARKVIEW AVENUE HARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL	*****4722	FRANK BENEDETTO AND CHRISTOPHER J MAINI	B & M CONCRETE	19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		GABRIEL FRASSETTI			04/10/2019	04/10/2024
DOL	DOL		GALINDA ROTENBERG		C/O GMDV TRANS INC 67-48 182ND STREET FRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	DOL		GEOFF CORLETT		415 FLAGGER AVE #302 STUART FL 34994	10/31/2018	10/31/2023
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	DOL		GIGI SCHNECKENBURGER		261 MILL RD EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	DOL	*****5674	GMDV TRANS INC		67-48 182ND STREET FRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	NYC		GREAT ESTATE CONSTRUCTION, INC.		327 STAGG ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	DOL		GREGORY S. OLSON		P.O BOX 100 200 LATT A BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	NYC		HARMEL SINGH		15 CLINTON LANE HICKSVILLE NY 11801	02/25/2016	02/25/2021
DOL	NYC		HAROLD KUEMMEL		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	DOL		HENRY VAN DALRYMPLE		2663 LANTERN LANE ATLANTA GA 30349	12/01/2015	12/01/2020
DOL	DOL	*****6370	HILLIANO CONSTRUCTION & ELECTRICAL INC		354 MAGNOLIA STREET ROCHESTER NY 14611	01/22/2015	01/22/2020
DOL	DOL	*****8282	IDEMA DEVELOPMENT INC		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL	*****8282	IDEMA GENERAL CONTRACTORS INC		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL	*****7001	INTEGRATED CONSTRUCTION & POWER SYSTEMS INC		SUITE 100 2105 W GENESEE STREETS YRACUSE NY 13219	01/06/2016	01/06/2021
DOL	DOL	*****5131	INTEGRITY MASONRY, INC.	M&R CONCRETE	722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023
DOL	DOL		IRENE KASELIS		32 PENNINGTON AVE WALDWICK NJ 07463	05/30/2019	05/30/2024
DOL	AG		J A M CONSTRUCTION CORP		SUITE 125 265 SUNRISE HIGHWAY ROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
DOL	DOL	*****4910	J V MAGIC TOUCH CORPORATION		94-25 57TH AVENUE, APT 5G ELMHURST NY 11373	01/12/2015	01/12/2020
DOL	DOL		J.A. HIRES CADWALLADER		P.O BOX 100 200 LATT A BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		JAMES B RHYNDERS		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL		JAMES C. DELGIACCO		722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023
DOL	DOL		JAMES E RHYNDERS		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	AG		JAMES FALCONE		SUITE 125 265 SUNRISE HIGHWAY ROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021

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DOL	DOL		JAMES LIACONE		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		JAMES RACHEL		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		JAMES RHYNDERS SR		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL		JAMES SICKAU		3090 SHIRLEY ROAD NORTH COLLINS NY 14111	04/19/2011	07/08/2020
DOL	DOL		JASON W MILLIMAN		C/O ROCHESTER ACOUSTICAL P O BOX 799HILTON NY 14468	02/19/2016	02/19/2021
DOL	DOL	*****5368	JCH MASONRY & LANDSCAPING INC.		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	NYC		JEFFREY CASSIDY		14 RAILROAD AVENUE VALHALLA NY 10595	05/15/2014	04/02/2020
DOL	DOL		JESSICA WHITESIDE		C/O BRRESTORATION NY INC 140 ARCADIA AVENUEOSWEGO NY 13126	09/12/2016	09/12/2021
DOL	AG		JOHN ANTHONY MASSINO		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JOHN F. CADWALLADER		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****4612	JOHN F. CADWALLADER, INC.	THE GLASS COMPANY	P O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	AG	*****0600	JOHNCO CONTRACTING, INC.		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JON E DEYOUNG		261 MILL RD P.O BOX 296EAST AURORA NY 14052	07/29/2015	07/29/2020
DOL	DOL		JON E DEYOUNG		261 MILL RD P.O BOX 296EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	DOL		JORGE VILLALOBOS		94-25 57TH AVENUE - APT 5 ELMHURST NY 11373	01/12/2015	01/12/2020
DOL	DOL		JORI PEDERSEN		415 FLAGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DOL		JOSE CHUCHUCA		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	DOL		JOSE MONTAS		27 BUTLER PLACE YONKERS NY 10710	03/18/2011	03/19/2020
DOL	AG		JOSEPH FALCONE		SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
DOL	DOL	*****9273	JOSEPH M LOVETRO		P O BOX 812 BUFFALO NY 14220	08/09/2016	08/09/2021
DOL	NYC		JOSEPH MARTINO		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	DOL		JOSEPH MARTONE		112 OSCAWANA HEIGHTS RD PUTNAM VALLEY NY 10542	03/13/2015	03/13/2020
DOL	DOL		JUANA MARTINEZ		C/O LEAD CONSTRUCTION 27 BUTLER PLACEYONKERS NY 10710	03/19/2015	03/19/2020
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
DOL	DOL	*****5062	K R F SITE DEVELOPMENT INC		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	DOL		KATIE BURDICK		2238 BAKER RD GILLET PA 16923	03/12/2018	03/12/2023
DOL	DOL		KENNETH FIORENTINO		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	DOL	*****9732	KENT HOLLOW SIDING LLC		29A BRIDGE STREET NEW MILFORD CT 06776	01/15/2016	01/15/2021
DOL	DOL		KIM SOROCENSKI		C/O SOLUTION MATTERS INC 198 NORWOOD ROADPORT JEFFERSON NY 11776	11/19/2015	11/19/2020
DOL	DOL	*****3490	L & M CONSTRUCTION/DRYWALL INC.		1079 YONKERS AVE YONKERS NY 10704	08/07/2018	08/07/2023
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL	*****6224	LAKESIDE FIRE SPRINKLERS LLC		125 CHAUTAUQUA AVENUE LAKEWOOD NY 14750	06/24/2015	06/24/2020
DOL	AG	*****4643	LALO DRYWALL, INC.		221 OLD FORD ROAD NEW PLATZ NY 12561	05/20/2016	05/20/2021

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DOL	DOL	*****4505	LARAPINTA ASSOCIATES INC		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		LAURI MARTONE		112 OSCAWANA HEIGHTS RD PUTNAM VALLEY NY 10542	03/13/2015	03/13/2020
DOL	DOL		LAVERN GLAVE		161 ROBYN RD MONROE NY 10950	09/15/2014	09/15/2019
DOL	DOL		LAVERN GLAVE		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL	*****1364	LEAD CONSTRUCTION SERVICES INC		3 ALAN B SHEPARD PLACE YONKERS NY 10705	03/19/2015	03/19/2020
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	08/14/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	08/14/2017	08/14/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022
DOL	DOL		LINDSEY R CRILL		143 FILLMORE AVENUE BUFFALO NY 14210	01/08/2015	01/08/2020
DOL	DA	*****4460	LONG ISLAND GLASS & STOREFRONTS, LLC		4 MANHASSET TRL RIDGE NY 11961	09/06/2018	09/06/2023
DOL	AG	*****4216	LOTUS-C CORP.		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023
DOL	AG		LUIS MARTINEZ	LALO DRYWALL	211 MAIN ST. NEW PALTZ NY 12561	05/20/2016	05/20/2021
DOL	DOL		M ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	AG	*****6957	M B DIN CONSTRUCTION INC		8831 20TH AVENUE/SUITE 6E BROOKLYN NY 11214	11/17/2015	11/17/2020
DOL	NYC	*****6317	M S QUALITY CONSTRUCTION LLC		27 MAPLEWOOD AVENUE COLONIA NJ 07067	02/04/2015	02/04/2020
DOL	DOL		M. ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	NYC		MACIEJ SONTOWSKI		27 MAPLEWOOD AVENUE COLONIA NJ 07067	02/04/2015	02/04/2020
DOL	NYC	*****9590	MACK GLASSNAUTH IRON WORKS INC		137 LIBERTY AVENUE BROOKLYN NY 11212	12/21/2015	12/21/2020
DOL	DOL	*****1784	MADISON AVE CONSTRUCTION CORP		39 PENNY STREET WEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL		MALARKEY'S BAR & GRILL LLC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****0705	MALARKEY'S PUB & GRUB LLC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	NYC		MAREK FABIJANOWSKI		50 MAIN ST WHITE PLAINS NY 10606	01/04/2019	01/04/2024
DOL	DOL		MARIACHI'S PIZZERIA		C/O DOUGLAS L MALARKEY 64 VICTORIA DRIVEBINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL		MARK MIONIS		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020

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DOL	DOL		MARVIN A STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		MASONRY CONSTRUCTION, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3333	MASONRY INDUSTRIES, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		MATTHEW IDEMA GENERAL CONTRACTORS INC		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL		MATTHEW P. KILGORE		4156 WILSON ROAD EAST TABERG NY 13471	03/26/2019	03/26/2024
DOL	DOL		MAURICE GAWENO		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****6416	MCCALL MASONRY		P O BOX 304 SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL		MCLEAN "MIKKI BEANE"		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MCLEAN "MIKKI" DRAKE		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MCLEAN M DRAKE-BEANE		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL	*****9445	MCLEAN M WALSH	ELITE PROFESSION AL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL	*****9445	MCLEAN M WALSH	ELITE PROFESSION AL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	NYC	*****5330	METRO DUCT SYSTEMS INC		1219 ASTORIA BOULEVARD LONG ISLAND CITY NY 11102	04/16/2014	11/19/2020
DOL	DOL	*****3368	MICEK CONSTRUCTION CO INC		20 CROSS STREET FALCONER NY 14733	12/02/2014	12/02/2019
DOL	DOL		MICHAEL A PASCARELLA		SUITE 100 2105 WEST GENESEE STREET SYRACUSE NY 13219	01/06/2016	01/06/2021
DOL	NYC		MICHAEL HIRSCH		C/O MZM CORP 163 S MAIN STREET NEW CITY NY 10956	01/28/2016	01/28/2021
DOL	DOL		MICHAEL LENIHAN		1079 YONKERS AVE UNIT 4 YONKERS NY 10704	08/07/2018	08/07/2023
DOL	AG		MICHAEL RIGLIETTI		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		MICHAEL WILSON	WILSON BROTHER DRYWALL CONTRACTOR S	36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	NYC		MILANCE HADZIC		22 CALIFORNIA AVE - STE 1 PATERSON NJ 07503	03/11/2015	03/11/2020
DOL	DOL	*****4829	MILESTONE ENVIRONMENTAL CORPORATION		704 GINESI DRIVE SUITE 29 MORGANVILLE NJ 07751	04/10/2019	04/10/2024
DOL	AG		MOHAMMED N CHATHA		8831 20TH AVENUE/SUITE 6E BROOKLYN NY 11214	11/17/2015	11/17/2020
DOL	DOL	*****2737	MOUNTAIN'S AIR INC		2471 OCEAN AVENUE- STE 7A BROOKLYN NY 11229	09/24/2012	09/18/2020
DOL	AG		MSR ELECTRICAL CONSTRUCTION CORP.		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		MUHAMMAD PERVAIZ		C/O CHAMPION CONSTRUCTION 2131 SCHENECTADY AVENUE BROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	NYC	*****3613	MZM CORP		163 S MAIN STREET NEW CITY NY 10956	01/28/2016	01/28/2021
DOL	DA	*****9786	NATIONAL INSULATION & GC CORP		180 MILLER PLACE HICKSVILLE NY 11801	12/12/2018	12/12/2023
DOL	NYC	*****1284	NEW AMERICAN RESTORATION INC		22 CALIFORNIA AVE - STE 1 PATERSON NJ 07503	03/11/2015	03/11/2020
DOL	DA	*****6988	NEW YORK INSULATION INC		58-48 59TH STREET MASPETH NY 11378	05/16/2012	05/08/2020
DOL	NYC	*****4839	NEW YORK RIGGING CORP		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	NYC	*****1968	NORTH AMERICAN IRON WORKS INC		1560 DECATUR STREET RIDGEWOOD NY 11385	05/15/2015	05/15/2020

NYSDOL Bureau of Public Work Debarment List 08/29/2019

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DOL	DOL	*****6966	NORTH COUNTRY DRYWALL AND PAINT		23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	*****0065	NORTHEAST LANDSCAPE AND MASONRY ASSOC		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL	*****1845	OC ERECTERS, LLC A/K/A OC ERECTERS OF NY INC.		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	NYC		ORSON ARROYO		C/O METRO DUCT SYSTEMS 12-19 ASTORIA BOULEVARDLONG ISLAND CITY NY 11102	04/16/2014	11/19/2020
DOL	NYC	*****9422	PELIUM CONSTRUCTION, INC.		22-33 35TH ST. ASTORIA NY 11105	12/30/2016	12/30/2021
DOL	DOL		PETER M PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL		PIERRE LAPORT		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	DOL	*****1543	PJ LAPORT FLOORING INC		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	DOL	*****6895	PROLINE CONCRETE OF WNY INC		3090 SHIRLEY ROAD NORTH COLLINS NY 14111	04/19/2011	07/08/2020
DOL	DA	*****6817	QUADRANT METAL BUILDINGS LLC		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021
DOL	NYC		RAMESHWAR ASU		137 LIBERTY AVENUE BROOKLYN NY 11212	12/21/2015	12/21/2020
DOL	DOL		RANA A KAHN		1973 81ST ST - SUITE A-5 BROOKLYN NY 11214	01/08/2015	01/08/2020
DOL	NYC		RANTIK PARIKH		13 LORIANN ROAD WARREN NJ 07059	07/15/2015	07/15/2020
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP		3 PARK CIRCLE MIDDLETOWN NY 10940	09/16/2013	09/15/2019
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP		3 PARK CIRCLE MIDDLETOWN NY 10940	01/30/2018	01/30/2023
DOL	AG	*****7015	RCM PAINTING INC.		69-06 GRAND AVENUE 2ND FLOORMASPETH NY 11378	02/07/2018	02/07/2023
DOL	DOL		REGINALD WARREN		161 ROBYN RD MONROE NY 10950	09/15/2014	09/15/2019
DOL	DOL		REGINALD WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	NYC	*****3461	RELIANCE GENERAL CONSTRUCTION INC		644 OCEAN PARKWAY BROOKLYN NY 11230	09/02/2015	09/02/2020
DOL	DA		RIANN MULLER		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021
DOL	DOL	*****9148	RICH T CONSTRUCTION		107 WILLOW WOOD LANE CAMILLUS NY 13031	11/13/2018	11/13/2023
DOL	DOL		RICHARD MACONE		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023
DOL	DOL	*****9148	RICHARD TIMIAN	RICH T CONSTRUCTION	108 LAMONT AVE SYRACUSE NY 13209	10/16/2018	10/16/2023
DOL	DOL		RICHARD TIMIAN JR.		108 LAMONT AVE SYRACUSE NY 13209	10/16/2018	10/16/2023
DOL	DOL		RICHARD TIMIAN JR.		108 LAMONT AVE SYRACUSE NY 13209	11/13/2018	11/13/2023
DOL	DOL	*****8618	RIEKS CONTRACTING LLC		4804 GAHWILER ROAD AUBURN NY 13021	05/01/2015	05/01/2020
DOL	DOL		ROBBYE BISSEAR		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROBERT A. VALERINO		3841 LANYARD COURT NEW PORT RICHEY FL 34652	07/09/2019	07/09/2024
DOL	DOL		ROBERT BRUNO		3 GAYLORD ST AUBURN NY 13021	11/15/2016	11/15/2021
DOL	DOL		ROBERT BRUNO		5 MORNINGSIDE DRIVE AUBURN NY 13021	05/28/2019	05/28/2024
DOL	DOL		ROBERT TORDELLA		125 CHAUTAUQUA AVENUE LAKEWOOD NY 14750	06/24/2015	06/24/2020
DOL	DOL	*****3859	ROCHESTER ACOUSTICAL CORP		P O BOX 799 HILTON NY 14468	02/19/2016	02/19/2021
DOL	DOL		RODERICK PUGH		404 OAK ST SUITE 101SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	DOL	*****4880	RODERICK PUGH CONSTRUCTION INC.		404 OAK ST SUITE 101SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	NYC		RODNEY SCOTT		201 HEMPSTEAD AVENUE WEST HEMPSTEAD NY 11552	10/30/2015	10/30/2020

NYSDOL Bureau of Public Work Debarment List 08/29/2019

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DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	09/16/2013	09/15/2019
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL		ROSEANNE CANTISANI			06/12/2018	06/12/2023
DOL	DOL		RYAN ALBIE		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	*****3347	RYAN ALBIE CONTRACTING INC		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	*****1365	S & L PAINTING, INC.		11 MOUNTAIN ROAD P.O BOX 408MONROE NY 10950	03/20/2019	03/20/2024
DOL	NYC		SABIR MUHAMMED		SUITE B-8 782 PELHAM PARKWAY SOUTHBRONX NY 10462	04/21/2016	04/21/2021
DOL	DOL	*****9874	SALFREE ENTERPRISES INC		2821 GARDNER ROAD POMPEY NY 13138	08/26/2016	08/26/2021
DOL	DOL		SALVATORE A FRESINA			08/26/2016	08/26/2021
DOL	DOL		SAM FRESINA			08/26/2016	08/26/2021
DOL	NYC	*****2117	SCOTT ELECTRICAL LLC		201 HEMPSTEAD AVENUE WEST HEMPSTEAD NY 11552	10/30/2015	10/30/2020
DOL	DOL	*****9751	SCW CONSTRUCTION		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	AG		SERGIO RAYMUNDO		109 DUBOIS RD. NEW PALTZ NY 12561	05/20/2016	05/20/2021
DOL	NYC	*****6597	SHAIRA CONSTRUCTION CORP.		421 HUDSON STREET SUITE C5NEW YORK NY 10014	02/20/2019	02/20/2024
DOL	DOL	*****1961	SHANE BURDICK	CENTRAL TRAFFIC CONTROL, LLC.	2238 BAKER ROAD GILLET PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE BURDICK		2238 BAKER ROAD GILLET PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE NOLAN		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		SHULEM LOWINGER		11 MOUNTAIN ROAD 28 VAN BUREN DRMONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL	*****0816	SOLAR ARRAY SOLUTIONS, LLC		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL	*****4025	SOLUTION MATTERS INC		198 NORWOOD ROAD PORT JEFFERSON NY 11776	11/19/2015	11/19/2020
DOL	DOL	*****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL	*****9933	STEED GENERAL CONTRACTORS, INC.		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL		STEFANOS PAPASTEFANOU, JR. A/K/A STEVE PAPASTEFANOU, JR.		256 WEST SADDLE RIVER RD UPPER SADDLE RIVER NJ 07458	05/30/2019	05/30/2024
DOL	DOL	*****9751	STEPHEN C WAGAR		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	DOL		STEVE TATE		415 FLAGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DOL		STEVEN P SUCATO		15-68 208TH STREET BAYSIDE NY 11360	06/23/2016	06/23/2021
DOL	DOL		STEVEN TESTA		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	NYC	*****9432	SUBLINK LTD		346 THIRD AVENUE PELHAM NY 10803	11/19/2015	11/19/2020
DOL	DOL	*****1060	SUNN ENTERPRISES GROUP, LLC		370 W. PLEASANTVIEW AVE SUITE 2.329HACKENSACK NJ 07601	02/11/2019	02/11/2024
DOL	DOL	*****8209	SYRACUSE SCALES, INC.		158 SOLAR ST SYRACUSE NY 13204	01/07/2019	01/07/2024
DOL	DOL	*****7441	T & T CONCRETE INC		2560 HAMBURG TURNPIKE P O BOX 367LACKAWANNA NY 14218	07/08/2015	07/08/2020
DOL	DOL		TALAILA OCAMPA		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	DOL	*****9852	TAP STEEL INC		ROUTE 26 3101 P O BOX 457CONSTABLEVILLE NY 13325	01/28/2016	01/28/2021
DOL	DOL	*****5570	TESTA CORP		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022

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DOL	DOL	*****0887	THE BRINSON PAINTING CORPORATION		72 TAUNTON PLACE BUFFALO NY 14216	04/14/2015	04/14/2020
DOL	DOL	*****5766	THE COKER CORPORATION	COKER CORPORATION	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL	*****8174	THE DALRYMPLE CORPORATION		UNIT 278 541 10TH STREET NWLANTA GA 30318	12/01/2015	12/01/2020
DOL	DOL	*****8174	THE DALRYMPLE GROUP LLC		289 JONESBORO RD/ STE 216 MCDONOUGH GA 30253	12/01/2015	12/01/2020
DOL	DOL		TIMOTHY A PALUCK		C/O TAP STEEL INC RTE 26 3101/ P O BOX 457CONSTABLEVILLE NY 13325	01/28/2016	01/28/2021
DOL	DOL	*****0600	TOMSON ALLOYS RECYCLING INC		143 FILLMORE AVENUE BUFFALO NY 14210	01/08/2015	01/08/2020
DOL	DOL	*****3453	TORCHIA'S HOME IMPROVEMENT		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL	*****8311	TRIPLE B FABRICATING, INC.		61 WILLETT ST. PASSAIC NJ 07503	10/26/2016	10/26/2021
DOL	DOL	*****9407	TURBO GROUP INC		15-68 208TH STREET BAYSIDE NY 11360	06/23/2016	06/23/2021
DOL	DOL	*****6392	V.M.K CORP.		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023
DOL	NYC		VALERIE VISCONTI		346 THIRD AVENUE PELHAM NY 10803	11/19/2015	11/19/2020
DOL	DOL		VICTOR ALICANTI		42-32 235TH ST DOUGLASTON NY 11363	01/14/2019	01/14/2024
DOL	DOL		VICTOR ROTENBERG		C/O GMDV TRANS INC 67048 182ND STREETFRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	NYC		VIKTAR PATONICH		2630 CROPSEY AVE BROOKLYN NY 11214	10/30/2018	10/30/2023
DOL	NYC		VITO GARGANO		1535 RICHMOND AVE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	DOL		WAYNE LIVINGSTON JR	NORTH COUNTRY DRYWALL AND PAINT	23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	*****3296	WESTERN NEW YORK CONTRACTORS, INC.		3841 LAYNARD COURT NEW PORT RICHEY FL 34652	07/09/2019	07/09/2024
DOL	DOL		WHITE PLAINS CARPENTRY CORP		442 ARMONK RD	06/12/2018	06/12/2023
DOL	DOL		WILLIAM C WATKINS		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		WILLIAM DEAK		C/O MADISON AVE CONSTR CO 39 PENNY STREETWEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL		WILLIE BRINSON		72 TAUNTON PLACE BUFFALO NY 14216	04/14/2015	04/14/2020
DOL	DOL	*****6195	WILSON BROTHER DRYWALL CONTRACTORS		36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	DOL	*****4043	WINDSHIELD INSTALLATION NETWORK, INC.		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****4730	XGD SYSTEMS, LLC	TDI GOLF	415 GLAGE AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DOL	*****7345	YES SERVICE AND REPAIRS CORPORATION		145 LODGE AVE HUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	DOL		YURIY IVANIN		C/O MOUNTAIN'S AIR INC 2471 OCEAN AVENUE-STE 7ABROOKLYN NY 11229	09/24/2012	09/18/2020
DOL	NYC		ZAKIR NASEEM		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	NYC	*****8277	ZHN CONTRACTING CORP		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022

"General Decision Number: NY20200006 02/28/2020

Superseded General Decision Number: NY20190006

State: New York

Construction Types: Heavy and Highway

Counties: Clinton and Essex Counties in New York.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes and apartments up to and including 4 stories), HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2020
1	02/28/2020

BRNY0002-013 06/01/2018

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 37.23	19.51+a

FOOTNOTE:

a. PAID HOLIDAYS: Memorial Day, July the 4th, Labor Day, and Thanksgiving Day (provided the employee is employed (1) day before and (1) day after the holiday.

CARP0291-006 07/01/2019

	Rates	Fringes
CARPENTER HEAVY & HIGHWAY CONSTRUCTION		

Carpenter.....	\$ 33.02	21.10
Pile Driver.....	\$ 33.02	21.10

ELEC0910-001 05/01/2019

	Rates	Fringes
ELECTRICIAN.....	\$ 35.00	5.75%+20.68

ELEC1249-003 05/06/2019

	Rates	Fringes
ELECTRICIAN (LINE CONSTRUCTION: LIGHTING AND TRAFFIC SIGNAL Including any and all Fiber Optic Cable necessary for Traffic Signal Systems, Traffic Monitoring systems and Road Weather information systems)		
Flagman.....	\$ 27.00	6.75%+24.15
Groundman (Truck Driver)....	\$ 36.00	6.75%+24.15
Groundman Truck Driver (tractor trailer unit).....	\$ 36.00	6.75%+24.15
Lineman & Technician.....	\$ 45.00	6.75%+24.15
Mechanic.....	\$ 36.00	6.75%+24.15

FOOTNOTE:

a. New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, plus President's Day, Good Friday, Decoration Day, Election Day for the President of the United States and Election Day for the Governor of the State of New York, provided the employee works the day before or the day after the holiday.

ELEC1249-004 05/06/2019

	Rates	Fringes
ELECTRICIAN (Line Construction) Overhead and underground distribution and maintenance work and all overhead and underground transmission line work including any and all fiber optic ground wire, fiber optic shield wire or any other like product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities :		
Flagman.....	\$ 31.23	6.75%+24.15
Groundman digging machine operator.....	\$ 46.85	6.75%+24.15
Groundman truck driver (tractor trailer unit).....	\$ 41.64	6.75%+24.15
Groundman Truck driver.....	\$ 41.64	6.75%+24.15
Lineman and Technician.....	\$ 52.05	6.75%+24.15

Mechanic.....	\$ 41.64	6.75%+24.15
Substation:		
Cable Splicer.....	\$ 57.26	6.75%+24.15
Flagman.....	\$ 31.23	6.75%+24.15
Ground man truck driver....	\$ 41.64	6.75%+24.15
Groundman digging machine operator.....	\$ 46.85	6.75%+24.15
Groundman truck driver (tractor trailer unit).....	\$ 41.64	6.75%+24.15
Lineman & Technician.....	\$ 52.05	6.75%+24.15
Mechanic.....	\$ 41.64	6.75%+24.15
Switching structures; railroad catenary installation and maintenance, third rail type underground fluid or gas filled transmission conduit and cable installations (including any and all fiber optic ground product by any other name manufactured for the dual purpose of ground fault protection and fiber optic capabilities), pipetype cable installation and maintenance jobs or projects, and maintenance bonding of rails; Pipetype cable installation		
Cable Splicer.....	\$ 58.71	6.75%+24.15
Flagman.....	\$ 32.02	6.75%+24.15
Groundman Digging Machine Operator.....	\$ 48.03	6.75%+24.15
Groundman Truck Driver (tractor-trailer unit).....	\$ 42.70	6.75%+24.15
Groundman Truck Driver.....	\$ 42.70	6.75%+24.15
Lineman & Technician.....	\$ 53.37	6.75%+24.15
Mechanic.....	\$ 42.70	6.75%+24.15

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, Good Friday, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and Election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two days after the holiday.

ELEC1249-008 01/01/2019

	Rates	Fringes
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ELECTRICIAN (Line Construction)

TELEPHONE, CATV
FIBEROPTICS CABLE AND
EQUIPMENT

Cable splicer.....	\$ 32.78	3%+4.93
Groundman.....	\$ 16.49	3%+4.93
Installer Repairman-Teledata		
Lineman/Technician-		

Equipment Operator.....\$	31.12	3%+4.93
Tree Trimmer.....\$	25.79	3%+9.98+a

a. New Year's Day, President's Day, Good Friday, Decoration Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Day after Thanksgiving, Christmas Day.

 ENGI0106-001 07/01/2018

HEAVY & HIGHWAY

	Rates	Fringes
Power equipment operators:		
GROUP 1.....\$	43.47	26.05+a
GROUP 2.....\$	42.56	26.05+a
GROUP 3.....\$	39.99	26.05+a
GROUP 4.....\$	47.47	26.05+a
GROUP 5.....\$	46.47	26.05+a
GROUP 6.....\$	45.47	26.05+a
GROUP 7.....\$	45.08	26.05+a

POWER EQUIPMENT OPERATOR CLASSIFICATIONS (HEAVY & HIGHWAY):

GROUP 1: Asphalt Curb Machine, Self Propelled, Slipform, Automated Concrete Spreader (CMI Type), Automatic Fine Grader, Backhoe (Except Tractor Mounted, Rubber Tired), Backhoe Excavator Full Swing (CAT 212 or similar type), Back Filling Machine, Belt Placer (CMI Type), Blacktop Plant (Automated), Boom truck , Cableway, Caisson Auger, Central Mix Concrete Plant (Automated), Concrete Curb Machine, Self Propelled, Slipform, Concrete Pump, Crane, Cherry Picker, Derricks (steel erection), Dragline, Overhead Crane (Gantry or Straddle type), Pile Driver, Truck Crane, Directional Drilling Machine, Dredge, Dual Drum Paver, Excavator (All Purpose Hydraulically Operated) (Gradall or Similar), Front End Loader (4 cu. yd. and Over), Head Tower (Sauerman or Equal), Hoist (Two or Three Drum), Holland Loader, Maintenance Engineer, Mine Hoist, Mucking Machine or Mole Pavement Breaker(SP) Wertgen; PB-4 and similar type, Power Grader, Profiler (over 105 H.P.) Quad 9, Quarry Master (or equivalent), Scraper, Fireman, Form Tamper, Grout Pump, Guniting Machine, Hammers (Hydraulic self-propelled), Hydra-Spiker, ride-on, Hydraulic Pump (jacking system), Hydro-Blaster (Water), Mulching Machine, Oiler, Parapet Concrete or Pavement, Shovel, Side Boom, Slip Form Paver, Tractor Drawn, BeltType Loader, Truck or Trailer Mounted Log , Chipper (Self Feeder), Tug Operator (Manned Rented Equipment Excluded), Tunnel Shovel

GROUP 2: Asphalt Paver, Backhoe (Tractor Mounted, Rubber Tired), Bituminous Recycler Machine, Bituminous Spreader and Mixer, Blacktop Plant (NonAutomated), Blast or Rotary Drill (Truck or Tractor Mounted), Boring Machine, Cage Hoist, Central Mix Plant (NonAutomated) and All Concrete Batching Plants, Cherry Picker (5 tons capacity and under), Concrete Paver (Over 16S), Crawler Drill, Self-contained, Crusher, Diesel Power Unit, Drill Rigs, Tractor Mounted, Front End Loader (Under 4 cu. yd.), Greaseman/Lubrication Engineer, HiPressure Boiler (15 lbs. and over), Hoist (One Drum), Hydro-Axe, Kolman Plant Loader and Similar Type Loaders, L.C.M. Work Boat Operator, Locomotive Mixer (for stabilized base selfpropelled), Monorail Machine, Plant Engineer, Profiler (105 H.P. and under), Grinder, Post Hole

Digger and Post Driver, Power Broom (towed), Power Heaterman, Power Sweeper, Revinus Widener, Roller (Grade and Fill), Scarifier, ride-on, Shell Winder, Skid steer loader (Bobcat or similar), Span-Saw, ride-on, Steam Cleaner, Pug Mill, Pump Crete Ready Mix Concrete Plant Refrigeration Equipment (for soil stabilization) Road Widener, Roller (all above subgrade), Sea Mule, Self-contained Ride-on Rock Drill, Excluding Air-Track Type Drill, Skidder, Tractor with Dozer and/or Pusher, Trencher. Tugger Hoist, Vermeer saw (ride on, any size or type), Winch, Winch Cat

GROUP 3: A Frame Winch Hoist on Truck , Articulated Heavy Hauler, Aggregate Plant, Asphalt or Concrete Grooving, Machine (ride on), Ballast Regulator, Ride-on Boiler (used in conjunction with production), Bituminous Heater, self-propelled, Boat (powered), Cement and Bin Operator, Compressors, Dust Collectors, Fork Lift, Generators, Pumps, Welding Machines, Light Plants, Heaters (hands-off equipment), Concrete Pavement Spreader and Finisher, Concrete Paver or Mixer (16S and under), Concrete Saw (self-propelled), Conveyor, Deck Hand, Directional Drill Machine Locator, Drill, (Core), Drill, (Well,) Farm Tractor with accessories, Fine Grade Machine, Tamper, ride-on, Tie Extractor, ride-on, Tie Handler, ride-on, Tie Insertter, ride-on, Tie Spacer, ride-on, Tire Repair, Track Liner, ride-on, Tractor, Tractor (with towed accessories), Vibratory Compactor, Vibro Tamp, Well Point

GROUP 4: Tower Cranes

GROUP 5: Cranes 50 tons and over

GROUP 6: Cranes 49 tons and below

GROUP 7: Master Mechanic

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day

IRON0012-002 07/01/2019

	Rates	Fringes
Ironworkers:		
SHEETER.....	\$ 31.80	28.59
STRUCTURAL, ORNAMENTAL, MACHINERY MOVER & RIGGERS, FENCE ERECTOR, REINFORCING, STONE DERRICKMAN, WELDER.....	\$ 31.55	28.59

LAB01822-001 07/01/2018

HEAVY & HIGHWAY

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 25.67	23.75+a
GROUP 2.....	\$ 25.47	23.75+a
GROUP 3.....	\$ 25.87	23.75+a

GROUP 4.....	\$ 26.07	23.75+a
GROUP 5.....	\$ 27.67	23.75+a

LABORERS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1. Basic Rate, Flagman Outboard and Hand Boats.

GROUP 2. Bull Float, Chain Saw, Concrete Aggregate Bin, Concrete Bootman, Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer Paverment Breaker, Handlers of all Steel Mesh, Small Generators of Laborers' tools, installation of bridge drainage pipe, Pipe Layers, Vibrator type rollers, tamper, Drill doctor, tail or screw operator on asphalt paver, water pump operator (1 1/2" and single diaphragm) nozzle (asphalt, gunite, seeding and sand blasting), Laborers on chain link fence erection, Rock splitter and power unit, pusher type concrete saw and all other gas, electric, oil and air tool operators, Wrecking Labor.

GROUP 3. All rock or drilling machine operators (except quarry master and similar type) Acetylene Torch operator, asphalt raker, powderman.

GROUP 4. Blaster, form setters, stone or granite curb setters.

GROUP 5. Hazardous Waste, Asbestos Abatement and Removal.

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

PAIN0201-002 05/01/2019

Rates	Fringes
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Painters:

Zone #2 All of ESSEX COUNTY	
Lead Abatement Workers,	
Structural Steel.....	\$ 30.09
Painters, Drywall	16.65
Finishers, Spray.....	\$ 29.09
	16.65
Zone #3 All of CLINTON COUNTY	
Lead Abatement Workers,	
Structural Steel.....	\$ 30.09
Painters, Drywall	15.45
Finishers, Spray.....	\$ 29.09
	15.45

PAIN0806-003 10/01/2018

CLINTON AND ESSEX COUNTIES

Rates	Fringes
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Painters:

Structural Steel and Bridge.	\$ 49.50	41.88
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PLUM0773-001 05/01/2019

Rates	Fringes
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Plumber and Steamfitter

CLINTON COUNTY.....	\$ 37.50	30.98
ESSEX COUNTY.....	\$ 38.50	30.98

SHEE0083-001 06/01/2019

	Rates	Fringes
Sheet metal worker.....	\$ 33.73	33.04+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day. If any of these holidays fall on a Saturday or Sunday, either the preceding Friday or following Monday will be observed as the holiday.

TEAM0687-003 06/01/2018

	Rates	Fringes
Truck drivers:		
HEAVY & HIGHWAY		
CONSTRUCTION		
GROUP 1:.....	\$ 25.82	25.16+a
GROUP 2:.....	\$ 26.04	25.16+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, provided the employee has worked the day before and the day after the holiday.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Pick-ups, panel trucks, flatboy materials trucks (straight jobs), single axle dump trucks, dumpsters and receivers, greasers, truck tireman, parts chaser, tandems and batch trucks, mechanics, semi trailer, lowboy trucks, asphalt distributor trucks and agitator, mixer trucks and dumpcrete type vehicles, truck mechanic, fuel truck and bus

GROUP 2: Specialized earth moving equipment - euclid type or similar off-highway equipment, where not self-loaded, straddle (ross) carrier, self-contained concrete unit, off highway tandem back dump, twin engine equipment and double hitched equipment where not self loaded

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including

preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a

new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material,

etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

"General Decision Number: NY20200060 04/10/2020

Superseded General Decision Number: NY20190060

State: New York

Construction Type: Building

County: Essex County in New York.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2020
1	04/10/2020

ASBE0040-005 05/01/2019

Rates	Fringes
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ASBESTOS WORKER/HEAT & FROST
INSULATOR

Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems.....	\$ 36.04	21.92
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BOIL0197-003 01/01/2017

Rates	Fringes
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BOILERMAKER.....	\$ 34.54	24.78
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BRNY0002-003 07/01/2019

PLATTSBURGH CHAPTER

	Rates	Fringes
BRICKLAYER, Includes Pointing, Caulking, and Cleaning.....	\$ 32.84	19.62
CEMENT MASON/CONCRETE FINISHER...	\$ 32.84	19.62
TILE FINISHER.....	\$ 27.71	17.24
TILE SETTER.....	\$ 34.66	19.58

ELEC0910-004 05/01/2019

	Rates	Fringes
ELECTRICIAN (Including Low Voltage Wiring and Installation of Alarms, Computers, Phones, & HVAC Temperature Controls Including Teledata & Sound Technicians).....	\$ 35.00	5.75%+20.68

ENGI0106-009 07/01/2018

	Rates	Fringes
POWER EQUIPMENT OPERATOR: Bobcat/Skid Loader; Bulldozer; Core & Well Drill (One Drum).....	\$ 42.28	25.70+a
Concrete Pump, Truck Mounted; Crane Oiler.....	\$ 39.38	25.70+a
Excavator; Tractor Mounted Drill; Self Contained Crawler Drill; Hydraulic Rock Drill.....	\$ 43.30	25.70+a

FOOTNOTE:

- a. PAID HOLIDAYS: New Years Day, Memorial Day, Independence
Day, Labor Day, Thanksgiving Day, Christmas Day

IRON0012-020 07/01/2019

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 31.55	28.59

LAB01822-003 07/01/2018

	Rates	Fringes
LABORER Common or General; Grade Checker; Landscape; Brick Mason Tender; Mortar Mixer..	\$ 23.68	21.45+a

FOOTNOTE:

- a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence
Day, Labor Day, Thanksgiving Day and Christmas Day.

PAIN0201-007 05/01/2019

	Rates	Fringes
Painters:		
Brush, Roller & Spray;		
Drywall Finishing/Taping.....	\$ 29.09	16.65

PLUM0773-006 05/01/2019		

	Rates	Fringes
PIPEFITTER, Includes HVAC		
Pipe Installation.....	\$ 38.50	30.98
PLUMBER.....	\$ 38.50	30.98

ROOF0241-002 07/01/2018		

	Rates	Fringes
ROOFER, Includes Roof Tear		
Off, and Installation of		
Modified Bitumen, Rubber,		
Shake & Shingle, and Single		
Ply Roofs.....	\$ 30.05	19.27

* SFNY0669-006 01/02/2020		

	Rates	Fringes
SPRINKLER FITTER (Fire		
Sprinklers).....	\$ 35.01	25.34

SHEE0083-004 06/01/2019		

	Rates	Fringes
SHEET METAL WORKER, Includes		
HVAC Duct Installation.....	\$ 33.73	33.04+a
a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If any of these holidays fall on a Saturday or Sunday, either the preceding Friday or following Monday will be observed as the holiday.		

SUNY2009-019 09/30/2009		

	Rates	Fringes
CARPENTER, Includes Drywall		
Hanging, and Form Work.....	\$ 24.18	7.16
IRONWORKER, ORNAMENTAL.....	\$ 20.75	15.29
IRONWORKER, STRUCTURAL.....	\$ 22.00	13.60
LABORER: Asbestos Abatement		
(Removal from Ceilings,		
Floors, Walls, and		
Mechanical Systems).....	\$ 19.76	9.45
LABORER: Asphalt Shoveler.....	\$ 20.89	8.95
LABORER: Mason Tender -		
Cement/Concrete.....	\$ 18.72	9.51

LABORER: Pipelayer.....	\$ 21.06	14.30
OPERATOR: Auger.....	\$ 21.19	15.85
OPERATOR: Backhoe.....	\$ 25.05	7.45
OPERATOR: Crane.....	\$ 23.94	11.40
OPERATOR: Forklift.....	\$ 22.45	9.34
OPERATOR: Loader.....	\$ 18.00	0.00
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 23.59	9.95
OPERATOR: Roller.....	\$ 17.75	5.89
TRUCK DRIVER: Dump Truck.....	\$ 16.00	2.62

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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1.) Has there been an initial decision in the matter? This can be:

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END OF GENERAL DECISION"

Technical Specifications

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SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Project Work covered by Contract Documents.
- B. Contractor's use of site and premises.
- C. Limits of Work area.
- D. Construction permits and easements.
- E. Owner occupancy.
- F. Work sequence and milestone dates
- G. Connections to existing facilities.

1.2. PROJECT – WORK COVERED BY CONTRACT DOCUMENTS

- A. Work covered by the Contract Documents is described in the Agreement.
- B. Work not specifically identified in the Bid Item Descriptions, but nevertheless required in the Contract Documents, shall be performed as shown and/or specified.

1.3. CONTRACTS

- A. Perform Work of each Prime Contract under separate lump sum and unit price contracts with the Owner.
- B. Work of each separate Contract is identified in the following Articles in the Contract Documents.

1.4. CONTRACTOR USE OF SITE AND PREMISES

- A. Limit use of Site to allow:
 - 1. Owner occupancy.
 - 2. Work by Owner.

1.5. LIMITS OF WORK AREA

- A. Confine construction operations within the area shown on the Drawings.
- B. Storage of equipment and materials, or erection and use of sheds outside of the Contract Limits, if such areas are the property of Owner, shall be used only with Owner's approval. Such storage or temporary structures, even within the Contract Limits, shall be confined to Owner's property and shall not be placed on properties designated as easements or rights-of-way.

1.6. CONSTRUCTION PERMITS

- A. Owner will obtain and pay for necessary construction permits from those authorities or agencies having jurisdiction over land areas, utilities, or structures which are located within the contract limits and which will be occupied, encountered, used, or temporarily interrupted by Contractor's operations.
- B. When construction permits are accompanied by regulations or requirements issued by a particular authority or agency, it shall be Contractor's responsibility to familiarize himself and comply with such regulations or requirements as they apply to his operations on this project. Any costs associated with additional field supervision by authorities or agencies shall be the Contractor's responsibility.
- C. Contractor shall acquire and pay for all required for completion of the proposed project.).

1.7. OWNER OCCUPANCY

- A. The Owner will occupy the premises during the entire period of construction for the conduct of normal operations.
- B. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

1.8. OPERATION OF EXISTING FACILITIES

- A. Normal operations of the existing facilities will be performed by Owner. Only Owner's staff is allowed to operate existing facilities including equipment, valves, gates, motor controls, etc.
 - 1. Provide Owner and Engineer a minimum of five working days written notice of necessary operation of existing valves, pumps, or equipment to facilitate construction activities.
 - 2. Contractor's activities shall not disrupt Owner's access to operate and maintain existing equipment and facilities. Contractor shall furnish any temporary access required, including ladders, which shall comply with OSHA laws and regulations, for necessary operations.
 - 3. Contractor's operations shall not disrupt access to existing properties and buildings.
 - 4. Existing isolation valves shown on Drawings or identified in the field shall not be relied upon to be operable. Contractor is responsible for isolating lines where necessary or where called for by Engineer.

1.9. CONNECTIONS TO EXISTING FACILITIES

- A. Contractor shall provide all cutting and patching required for connection to existing facilities.
- B. Temporary connections to existing facilities are covered in Section 01500, Temporary Facilities.

1.10. WORK SEQUENCE AND MILESTONE DATES

- A. Construct work in sequence to maintain water service, existing water treatment plant operation, and accessibility to properties and minimize disruption to pedestrian and vehicular traffic.
- B. Contractor shall supply Engineer and Owner submittal of proposed construction sequencing and timeframes prior to commencing work, and no later than the Notice to Proceed. The recommended construction sequencing is as follows;

Phase I:

1. Complete temporary electrical service work items to allow for electric service to the pilot building (temporary treatment buildings), and existing water treatment building with a 3-phase double throw transfer switch. Existing sanitary sewer pump stations powered by the existing water plant shall remain in service along with the emergency power generator. If material purchase allows for timing, new generator can be installed at this time.
2. Construct new pump station and associated force main work.
3. Install new 8" ductile iron water main raw water feed line with tee and associated valving for temporary pilot feed line. Construction should minimize disruption to water service as the raw water line is required for the existing water treatment plant to function. Disinfection and leakage testing should be conducted immediately following the installation prior to placing the line back in service. Following the raw water feed line installation, the raw water pumps and raw water pump shelter shall be constructed with the raw water feed line to the pilot building.
4. Waterboy Filtration Unit #2 shall be installed into the existing pilot building and wired to the existing power panel and associated PLC (programmable logic controller). The remainder of the temporary treatment items shall then be constructed.
5. The temporary treatment plant shall then be placed into service after passing all required testing (pressure/leakage and disinfection requirements). This event shall be coordinated with the Town, Town Water Plant Operator, Engineer and NYS Department of Health.

Phase II:

1. Commencing the successful start-up of the temporary treatment, the existing water treatment plant shall be demolished in accordance with the Contract Documents. Any and all equipment removed from the water plant shall remain the Town's property, unless specified within the Contract Documents.
2. Contractor shall then run any buried conduit, floor drains, etc. required before pouring the new building foundation and floor.
3. The remainder of the building structure shall then be constructed.

Phase III:

1. Once the building is constructed, the new water treatment plant mechanicals, controls and electrical work can be constructed.
2. Once ready for plant start-up the Waterboys from the temporary treatment shall be moved into the final treatment plant with plant start-up commencing immediately with coordination between the Town, Town Operator, Engineer, and NYS Department of Health.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

SECTION 01019
CONTRACT CONSIDERATIONS

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Cash allowances.
- B. Schedule of Values.
- C. Application for Payment.
- D. Change procedures.
- E. Alternates.

1.2. DEFINITIONS

- A. Mobilization - Mobilization includes, but is not limited to, performance of preparatory construction operations, including the movement of personnel and equipment to the Project Site; application, fee payment, and acquisition of all required permits (i.e. erosion and sediment control plans, temporary and permanent building and trade permits, utility connections, etc.); and the establishment of Engineer's and Contractor's offices, buildings, and other facilities required at the Site in order to begin work on a substantial phase of the Contract. The cost of insurance and bonds.

1.3. SCHEDULE OF VALUES

- A. Submit three hard copies of Schedule of Values and one electronic copy in Microsoft Excel of Schedule of Values in accordance with the time frames identified in General and Supplemental Conditions.
- B. Line items shall be subdivided into the Bid Items shown on the Bid Form.
- C. The sum of all line items in the Schedule of Values shall equal the Total Bid Price included on the Bid Form.
- D. Each line item shall include a directly proportional amount of the Contractor's overhead and profit.
- E. Schedule of Values shall serve as a breakdown Work used to establish progress payments. Progress payments for lump sum items will be made based on the percentages of completion of the work items included in the Schedule of Values for each lump sum item. Progress payments for Unit Price Work will be based on actual quantities of work performed. Progress payments for Contingent Unit Price work will only be made if work is authorized by Owner and/Engineer. Progress payments for Allowances will be made as described elsewhere in the Contract Documents.
- F. For Lump Sum Bid Items, the following Format shall be followed when developing the Schedule of Values.

- 1. If Mobilization is not identified in the Bid Form as a separate Bid Item, Contractor may include in the Schedule of Values a line item for Mobilization as part of a

Lump Sum Bid Item.

- a. Lump sum line item shall include all work described in the definition of mobilization included herein.
 - b. Costs for bonds and insurance shall be included in the lump sum mobilization line item.
 - c. When Contractor has made utility connections, installed Contractor's field offices, Owner's and/or Engineer's field offices, and all other facilities required to begin work on a substantial portion of the Project, a payment of 50 percent of the lump sum mobilization Bid item will be made provided Contractor has already satisfied the requirements of General Conditions Article 2. The remaining 50 percent will be prorated over the next five monthly progress payments.
 - d. Mobilization cost shall not be greater than 5 percent of the Total Bid Price.
2. Included separate line items for demobilization and contract closeout.
3. Site work shall be subdivided into itemized quantities and unit costs for all individual construction components. Items shall be separated according to specification section titles listed in the Table of Contents.
- a. Sitework shall not include earthwork (such as excavation) or structural work (such as foundations) specific to a particular structure or process.
 - b. Include erosion and sediment control under sitework, unless listed as a separate line item in the bid.
 - c. Include bypass pumping under sitework and include daily, weekly, or monthly unit costs for providing and operating the bypass pumping system(s).
 - d. Include dewatering under sitework and include daily costs for each structure.
 - e. Include off-site hauling of fill material under sitework.
 - f. Include site restoration.
 - g. Include piping.
 - 1) Piping shall be subdivided into itemized quantities and unit costs for individual components.
 - 2) Identify major piping by pipe diameter and material as individual line items (i.e. 12-inch ductile iron pipe).
 - 3) Piping costs shall be stated as cost per unit length, based on the number of linear feet for each piping system estimated by Contractor.
 - 4) Piping installation costs may include labor, excavation, bedding, encasement, and/or backfill if desired.

- h. Include valves and hydrants based on valve type and size.
- 4. Revise Schedule of Values to include executed Change Orders with each Application for Payment. List each Proposed Change Order (PCO) that is incorporated into executed Change Orders.

1.4. APPLICATIONS FOR PAYMENT

- A. Submit three original signature versions of each application on forms furnished by Engineer.
- B. Contractor must have all record documents as identified in General Conditions Article 15 current and up to date prior to submitting Applications for Payment.

1.5. CHANGE PROCEDURES

- A. Supplementing the General Conditions and Supplementary Conditions, Engineer may issue a Proposal Request or Notice of Change which includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a proposal to perform the indicated work indicating a proposed adjustment in Contract Price and Contract Times within 10 days.
- B. Contractor may propose changes by submitting a request for change to Engineer, describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, and the effect on the Contract Price and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors.
- C. Execution of Change Orders - Engineer will issue Change Orders for signatures of parties in the following order: Engineer, Contractor, Owner.

1.6. ALTERNATES

- A. Bid alternates identified on the Bid Form will be reviewed and accepted or rejected at the Owner's discretion prior to execution of the Agreement. Accepted Additive and Deductive Alternates will be identified in the Agreement. Accepted Additive Alternates will be included in the Work and accepted deductive alternatives will not be included in the Work.

1.7. STANDARD FORMS

- A. Use EJCDC Change Order Form No. C-941, attached to this section.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01025

GENERAL CONTRACT BID ITEMS
CONTRACT: TE-2020-G
(BID ITEM DESCRIPTIONS)

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Price make-up.
- B. Elements of Bid Item Description page.
- C. List of General Contract bid items.
- D. Bid Item Descriptions - Attached pages.

1.2. PRICE MAKE-UP

- A. General Contract bid item prices bid by Contractor are deemed to be full compensation for all required labor, products, tools, equipment, plant, transportation, testing, inspection, services, incidentals, administrative, procedures, applicable taxes, permit fees, overhead, profit, and other miscellaneous expenses.

1.3. ELEMENTS OF BID ITEM DESCRIPTION PAGE

- A. Identification of unit price item, as set forth in the Bid Form.
- B. Brief statement of work involved in the item.
- C. Listing of components of work which make-up the item covering each component.
- D. Cross-references to associated work not included in the item.
- E. Criteria to be applied in measuring number of completed units, for payment purposes.
- F. Limitations, if any, imposed on the measurement of completed units, for payment purposes.

1.4. LIST OF GENERAL CONTRACT BID ITEMS - CONTRACT NO. TE-2020-G

Table 1: General Contract Base Bid

Bid Item No.	Description	Cost Basis	Bid Price (in figures)
G-1	Mobilization, Demobilization, Bonds & Insurance	Lump Sum	\$
G-2	General Construction Work (Use total from General Contract Supplemental Breakdown Table 2 on subsequent sheets)	Lump Sum	\$
Base Bid Total (In Figures)			\$

Table 2: General Contract Supplemental Breakdown

Work Item No.	Description	Units	Unit Price	# of Units	Total (in figures)
C1	Demolition	LS	N/A		\$
C2	New Building Construction	LS	N/A		\$
C3	New Treatment Plant Construction	LS	N/A		\$
C4	Chlorine Contact Time Piping, Fittings & Appurtenances	LS	N/A		\$
C5	New Sanitary Pump Station, Control Panel & Clean Water Test	LS	N/A		\$
C6	New Force Main & Air Release Valve Assembly	LS	N/A		\$
C7	Temporary Treatment Plant Construction	LS	N/A		\$
C8	Temporary Raw Water Pump Station Shelter	EA		1	\$
C9	Temporary Chemical Room/Laboratory Building	EA		1	\$
C10	Breakdown & Cleanup of Temporary Treatment and Buildings w/Relocation of Temp. Buildings to Town Highway Garage	LS	N/A		\$
C11	Equipment Start-Up/Performance Testing	LS	N/A		\$
C12	Pressure & Leakage Testing and Disinfection & Bacteriological Testing	LS	N/A		\$
C13	Erosion & Sediment	LS	N/A		\$

	Controls			
C14	Site Restoration	LS	N/A	\$
Grand Total of Item G-2 (In Figures)				\$

Table 3: General Contract Bid Alternates

Work Item No.	Description	Units	Unit Price	# of Units	Total (in figures)
A1	Rain Garden (See drawing C-12)	LS	N/A		\$
A2	Tree & Shrub Plantings on Earthen Berm (See drawings C-13 to C-15)	LS	N/A		\$
Grand Total of Bid Alternates (In Figures)					\$

Bid Alternate Notes:

1. Bid alternates are not included for basis of award.
2. Bid alternates are provided for use in the contract should alternate or additional work be required.

1.5. BID ITEM DESCRIPTIONS

- A. Bid Item Description pages are attached at the end of this section.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

General Contract – TE-2020-G
Bid Item Descriptions

General Notes for All Work Items:

1. Work for each listed work item shall generally include, but is not necessarily limited to, all equipment procurement, equipment installation, startup, performance testing, commissioning, training, operation and maintenance manuals, and all field services by equipment manufacturer/supplier for the work as described within the Contract Drawings.
2. The work item descriptions are not all inclusive, and the Contractor shall attend the mandatory pre-bid meeting, submit any request for information (RFI), and make their own judgements on the scope of work required to successfully complete the project in accordance with the Contract Documents.

General Contract Description of Work:

- The work generally includes but is not necessarily limited to: Selective demolition to occur with the existing concrete building structure and chlorine contact tank. Demolition of the existing D.E. tank in its entirety. The existing building will receive a new 435 square foot addition, including a new precast concrete hollow core plank roof and concrete floor within the new addition and the remaining building structure. The new addition will include an ADA restroom, chemical storage room and expansion of the existing pump room. The existing building site is very small with Lake Champlain adjacent on 2 sides, because of this a high level of coordination shall be maintained between building operations, all trades, other contracts, existing utilities remaining, excavation of new underground utilities and construction of the new building addition.
- Demolition shall be coordinated with the electrical contractor, water treatment operator, Owner and Engineer. A current temporary water treatment system with-in an on-site shed shall be in operation during the demolition and new construction scope of work. The electrical contractor will install and provide temporary electrical service to this shed during building demolition and new construction. Selective building demolition shall proceed after removal of existing process equipment, piping, and loose equipment within the building. Prior to demolition, electrical fixtures, panels, process panels and the electrical service shall be disconnected and removed by the electrical contractor.
- Remove existing cast in place concrete roof structure and steel beams. Existing cast in place walls shall remain intact.
- Remove the existing wood stud front wall and the exterior siding/furring system to expose existing concrete walls.
- Remove the existing concrete floor slab, 6" of base below slab and all underground piping and conduits.
- Remove the existing D.E tank in its entirety.
- Remove the interior concrete walls with-in the existing chlorine contact tank. Existing cast in place concrete perimeter walls are to remain intact. Also remove all piping with-in this tank to beyond the exterior wall.
- Construct new cast in place concrete footings for the new addition and retaining wall.
- Construct new pumping station and underground piping.
- Construct new cast in place concrete walls for the new addition and retaining wall.
- Provide and install new precast hollow core roof planks for the entire building.
- Pour new concrete topping on roof, slope as indicated on drawings.
- Install new roofing system.

- Install new aluminum railing system on roof.
- Construct new cast in place concrete sidewalks and entrance pad.
- Provide and install new underground floor drain piping, floor sumps and sanitary lines to new plumbing fixture locations.
- Provide and install new stone base and 10 mil vapor barrier for the floor.
- Pour new concrete floors and finish and slope per drawings.
- Pour new concrete equipment housekeeping pads.
- Start removing existing process equipment from shed and relocate them into new pump room.
- Provide temporary wall and door for security during the process equipment relocation task.
- Construct new metal stud front wall.
- Provide and install new exterior doors, hardware and louvers. Louvers are by the electrical contractor, installed by the general.
- Construct new metal stud interior walls.
- Install new interior plywood on studs and install new FRP wall panels.
- Provide and install new water heater and domestic water lines.
- Install new process equipment pumps, panels and piping.
- Install new wood furring, plywood and stone veneer to the exterior concrete walls.
- Provide and install new fiber cement board siding to exterior of front door.
- Provide and install new floor drain assemblies, plumbing fixtures and restroom accessories.
- Provide and install new casework.
- Regrade surrounding area around building site and seed grass areas disturb by this contract.
- Provide and install new compacted stone base for parking area and drive.
- Construct all required temporary treatment items including providing and installing the raw water temporary pump station shelter and temporary chemical room/laboratory building.
- Sequence the final water treatment plant startup by moving treatment equipment from temporary treatment to the final water treatment plant with coordination with the water operator, Owner, Engineer and NYS Department of Health.
- Note: Additional work descriptions provided under bid item description section below.

General Contract Bid Item Descriptions:

Bid Item G-1: Mobilization, Demobilization, Bonds & Insurance:

- Description:
 - Work shall generally include but is not necessarily limited to:
 - Mobilization
 - Demobilization
 - Insurance and Bonds (General & Supplementary Conditions)
 - Summary of Work (Section 01010)
 - Contract Considerations (Section 01019)
 - Coordination and Meetings (Section 01039)
 - Submittals (Section 01300)
 - Progress Schedules (Section 01310)
 - Construction Documentation (Section 01380)
 - Preconstruction photographs
 - Construction photographs
 - Quality Control (Section 01400)

- Temporary Facilities (Section 01500)
- Maintenance of Traffic (Section 01550)
- Contract Closeout (Section 01700)

Bid Item G-2: General Construction Work:

- **Work Item No. C1: Demolition**

- Description:

- Work generally includes removal of existing process piping with-in the pump building, existing process equipment, existing cast in place concrete roof, existing front stud wall and door, existing concrete floor slab, underground existing utilities with-in the building, existing D.E. tank in its entirety, interior walls with-in the existing chlorine contact tank and existing piping with-in the chlorine contact tank.
 - Well Abandonment:
 - Work under this item shall generally include the abandonment of the three (3) existing groundwater wells as detailed on the Contract Documents.
 - The general contractor shall abandon the existing wells in accordance with applicable regulations and shall generally include the following:
 - The entire length of the drill hole including casing interior shall be ground, and the casing cut off at least four feet below grade.
 - After backfilling, the area shall be graded so that surface water flows away from the abandoned well locations.
 - Removal/abandonment of manhole structure assembly:
 - The contractor shall complete the removal/abandonment of the manhole structure assembly located on the edge of Lake Champlain as detailed on the Contract Documents under this work item.
 - The contractor shall ensure all proper permits are obtain prior to commencing work on this task. A NYS Department of Environmental Conservation Article 15 permit may or may not be required, and the Engineer and Owner will assist the Contractor with obtaining the required permit, if necessary.

- **Work Item No. C2: New Building Construction**

- Description:

- Work generally includes the construction of new cast in place concrete footings/walls for new addition, provide/install new precast hollow core concrete roof panels for entire building, pour new concrete topping for roof, provide/install new roofing, provide/install new roof railing system, construct new cast in place concrete footings and walls for new retaining wall, provide and install new underground piping for floor drains/floor sumps/plumbing fixtures, install new stone floor base with vapor barrier, pour new concrete floor/equipment pads, pour new concrete sidewalk with stone base, construct new metal stud interior walls, , construct new metal stud front wall, provide/install new doors/hardware/louvers, provide/install new interior

exterior finishes, provide/install new water heater/domestic water lines, provide/install new plumbing fixtures/floor drains/floor sumps and provide/install new casework.

- **Work Item No. C3: New Treatment Plant Construction**

- Description:

- 8" DIP raw water main, fittings & appurtenances:
 - Work for this item generally includes the installation of new 8" class 52 ductile iron raw water main, fittings and appurtenances from the 8" resilient wedge mechanical joint gate valve assembly detailed on the temporary treatment plan to the 8"x4" ductile iron reducing elbow located within the new water treatment plant as detailed on the contract drawings.
 - The contractor shall remove and dispose of the existing 8" raw water main while installing the new 8" ductile iron.
 - This work item should include all required embedment, backfill, compaction testing (as required), pressure & leakage testing and disinfection for the proper installation of the 8" ductile iron raw water main.
 - Two raw water pump installation including raw water piping, fittings & appurtenances to Waterboy units:
 - Work for this item generally includes the installation of the two raw water pumps, schedule 80 PVC piping, fittings (sch80 PVC or brass), ball valves, check valves, flowmeter with grounding rings, static mixer, air release valving, unions and any associated appurtenances required to connect the two raw water pumps to the three Waterboy treatment units influent connection (to the mechanical float actuated ball valves on the Waterboy influent line).
 - Work to include any wall supports and/or ceiling supports required to install the pipe & fittings in accordance with Contract Documents and manufacturer's recommendations.
 - This work item shall include all required manufacturer startup/certification for the raw water pumps, required materials/appurtenances for proper installation, pressure & leakage testing and disinfection as required for the installation of the two new raw water pumps including raw water piping, fittings & appurtenances to the Waterboy units.
 - Electrical contractor to provide grounding per code meeting the manufacturer recommendations for the flowmeters (to each grounding ring [2 per flowmeter]).
 - Electrical contractor to provide power wiring and conduits along with 4-20 mA wiring and conduit to Waterboy control panels from flowmeters.

- Installation of (3) three Waterboy filter units:
 - Work for this item generally includes the installation of the three Waterboy conventional filtration units. ***The Town has purchased the Waterboy units outside of this contract, so the Contractor will not be responsible for including costs to purchase the treatment units within this contract.*** The Contractor should include all costs required for installation of the units per the Contract Documents. The Contractor shall provide
 - Work for this item will include any work associated with draining the Waterboy units from the temporary treatment building, and moving those units, including the third unit to the new Water Treatment Plant building. Contractor shall include costs for coordinating startup of the units with the Owner and Engineer to allow adequate time for Westech (Waterboy manufacturer) to be on site to install media and provide startup assistance.
- Effluent piping, fittings & appurtenances:
 - Work for this item shall generally include all piping, fittings & appurtenances from the effluent union installed on each Waterboy unit to the influent flanges on the U.V. disinfection units.
 - Effluent piping, fittings & appurtenances shall also be provided under this work item from the U.V. unit effluent flanges to the 4" flange connection before leaving the water plant and entering the chlorine contact time piping. Contractor shall provide ball valves, required fittings & appurtenances, air release valving, and effluent static mixer as detailed within the Contract Documents.
 - Costs for this item shall include the two blind flange connections, ball valves, butterfly valves, and all associated fittings and appurtenances to install the work as detailed within the Contract Documents.
 - Work shall also include all pressure & leakage testing for the piping/fittings, and disinfection of the system.
 - Work to include any wall supports and/or ceiling supports required to install the pipe & fittings in accordance with Contract Documents and manufacturer's recommendations.
 - Electrical contractor to provide grounding per code meeting the manufacturer recommendations for the flowmeters (to each grounding ring [2 per flowmeter]).
 - Electrical contractor to provide power wiring and conduits along with 4-20 mA wiring and conduit to Waterboy control panels from flowmeters.
- (2) Two U.V. units, fabricated steel frame & U.V. control panel:
 - Work for this item shall generally include the purchase and installation of (2) Trojan U.V. Swift Units including the fabricated steel frame, and U.V. control panel in accordance with the Contract Documents.

- Work shall include manufacturer startup and certification of the U.V. disinfection assembly to ensure proper disinfection is achieved per the Contract Documents.
- Electrical contractor to provide power wiring to connect the U.V. control panel and U.V. units in accordance with manufacturers specifications and wire alarm I/O's to Waterboy Control Panel.
- 4" RPZ assembly and backwash supply piping, fittings & appurtenances to Waterboy units:
 - Work for this item shall generally include installation of the 4" RPZ assembly and backwash supply piping, fittings & appurtenances from the tee installed from the chlorine contact piping effluent (where the piping enters the building) to the backwash feed connections to each of the three Waterboy units (to connect to the 2" threaded tee on the Waterboys as detailed on the Contract Drawings).
 - Any all fittings, appurtenances, air release valves, and flowmeter with grounding rings should be provided and installed under this work item.
 - All pressure & leakage testing, disinfection and manufacturer testing/certification of the RPZ assembly shall be provided under this work item as required to successfully install the 4" RPZ assembly and backwash supply piping, fittings & appurtenances to the Waterboy units.
- 6" DIP effluent piping, fittings & appurtenances to distribution system limits:
 - Work for this item shall generally include all required piping, fittings & appurtenances to install the 6" ductile iron effluent piping including the 6"x4" ductile iron reducing elbow in the water plant to replace the buried 6" ductile iron pipe to the connection of the 4" temporary treatment line that is installed as part of the temporary treatment work.
 - The contractor will have to carefully excavate to install the new main in the same location/alignment of the old 6" water main through the existing building footing.
 - All pressure & leakage testing, disinfection, required backfill & embedment, and compaction testing shall be included under this work item for successful installation of the 6" DIP effluent piping, fittings & appurtenances to distribution system limits as detailed on the Contract Documents.
- Chemical feed system assembly installation, chemical plumbing to influent and effluent static mixers:
 - Work for this item shall generally include the procurement and installation of the chemical feed system assembly and chemical plumbing to the influent and effluent static mixers.
 - ***The Town has previously purchased some chemical equipment outside of this contract.*** The contractor shall provide costs to install the chemical equipment assembly and chemical feed piping to the

influent and effluent static mixers as shown on the Contract Documents.

- Any core drilling through the existing wall and required conduits and pipe mounts/supports shall be included within the costs to successfully install the chemical feed system assembly as detailed within the Contract Documents.
- Electrical contractor shall provide receptacles that are wired to the Westech Control Panel (refer to Westech drawings for connecting cable types to be provided by electrical contractor). Power to the chemical pumps are based upon the receptacle wired to the Waterboy Control Panel to power on when plant is called to run, and off when the plant is signaled to shut off.
- Electrical contractor shall provide 4-20 mA conduit and wiring from chemical pumps to the control panels to flow past the chemical feed pumps.
- Influent & effluent turbidimeters and particle counters including feed and waste line plumbing:
 - Work for this item should generally include installation of the influent and effluent turbidimeters and particle counters including the feed and waste line plumbing as detailed within the Contract Documents.
 - Electrical contractor shall provide receptacles for general contractor to plug power cords from turbidimeters and control panels into.
 - Electrical contractor to run 4-20 mA cables and conduits from turbidimeters and particle counters to Westech Waterboy Control Panel.
- Chlorine analyzer and feed/drain line plumbing:
 - Work for this item shall generally include the procurement and installation of the chlorine analyzer and feed/drain line plumbing, including any required fittings and appurtenances.
 - Electrical contractor shall provide power wiring and conduit for the chlorine analyzer.
 - Electrical contractor shall provide any 4-20 mA cables and conduits from the chlorine analyzer to the Westech Waterboy Control Panel.
- Waterboy power & control panels:
 - Work for this item shall generally include the installation of the Waterboy power and control panels from the temporary treatment building to the new water treatment building.
 - Electrical contractor shall provide power wiring and I/O cable/conduits from the power and control panels to other treatment items as detailed within the Contract Documents (refer to Westech drawings for connecting cable types to be provided by electrical contractor).

• **Work Item No. C4: Chlorine Contact Time Piping, Fittings & Appurtenances**

- Description:
 - Work for this item shall generally include all required piping, fittings and appurtenances as necessary to install piping from the 4" flange connection leaving the U.V. units to the tee connection located in the water treatment plant.
 - Work shall include all core drills through the existing concrete treatment plant wall (twice for entering and leaving from the chlorine contact time piping), installation of link-seals as required to seal the penetrations, installation of buried piping including the chlorine contact time piping in the demolished existing chlorine contact tank, any embedment and backfill as required to install the buried piping as detailed within the Contract Documents.
 - All pressure & leakage testing, disinfection and compaction testing shall be completed under this work item as required to successfully install the chlorine contact time plumbing, fittings & appurtenances.

- **Work Item No. C5: New Sanitary Pump Station, Control Panel & Clean Water Test**
 - Description:
 - Work for this item shall generally include the installation of the new sanitary pump station assembly located outside of the treatment building including the pedestal and pedestal mounted control panel.
 - The general contractor shall provide a qualified manufacturer or representative to complete the clean water start-up of the pump station assembly to provide written certification to the Owner & Engineer to ensure the pump station operates and was installed accordance to the manufacturer's requirements and as detailed on the Contract Documents.
 - Electrical contractor shall complete required power wiring/conduits and any other applicable I/O cable/conduit runs as detailed within the Contract Documents.

- **Work Item No. C6: New Force Main & Air Release Valve Assembly**
 - Description:
 - The general contractor shall supply the required materials and related appurtenances to complete the installation of the high density polyethylene (HDPE) force main from the sanitary pump station to the existing sanitary sewer manhole located at the intersection of Church Street and Lake Street near Begg's Park as detailed on the Contract Documents.
 - The work item shall also include the Contractor to core drill, provide a link-seal, grouting, and any required manhole bench work to successfully install the new force main into the existing manhole structure.
 - Any required pipe embedment, backfill, compaction testing and pressure and leakage testing shall be included under this work item.
 - This work item shall generally include the installation of the air release valve assembly on the new HDPE force main as detailed within the contract documents.

- **Work Item No. C7: Temporary Treatment Plant Construction**
 - Description:
 - Raw water main (8" & 4"), fittings & appurtenances to temp. raw water pumps:
 - Work under this item shall generally include all work required to install the 4" and 8" ductile iron raw water main, fittings & appurtenances to the temporary raw water pump shelter as detailed on the Contract Documents.
 - Work for this item shall also include all embedment, backfill, pressure & leakage testing and disinfection for the water main assembly.
 - Temporary raw water pump assembly (2 pumps):
 - Work under this item shall generally include installation of the two raw water pump assemblies and associated fittings and appurtenances into the temporary raw water pump station shelter as detailed on the contract documents.
 - It is assumed that the general contractor will use the pumps proposed for the final treatment design for the temporary raw water pumps (similar piping configuration is proposed for ease of installation). It is also assumed that the pumps will be moved to the final treatment building once ready as part of construction sequencing (e.g.: move one pump, place in service, then move final pump).
 - Electrical contractor to provide power wiring/conduits as required and wiring/conduits to the Waterboy control panel in the temporary treatment building.
 - Temporary raw water feed line, fittings & appurtenances to (2) Waterboy units:
 - Work for this item generally includes the installation of the temporary raw water feed line piping, fittings, flowmeter with grounding rings, static mixer, air release valving, unions and any associated appurtenances required to connect the two raw water pumps to the two Waterboy treatment units influent connection located in the temporary treatment building (to the mechanical float actuated ball valves on the Waterboy influent line).
 - Work to include any wall supports and/or ceiling supports required to install the pipe & fittings in accordance with Contract Documents and manufacturer's recommendations.
 - This work item shall include all required materials/appurtenances for proper installation, pressure & leakage testing and disinfection as required for the installation of the temporary raw water feed line, fittings & appurtenances to the Waterboy units.
 - Provide heat trace wire, insulation, and protective barriers sufficient for winter operation.

- Electrical contractor to provide grounding per code meeting the manufacturer recommendations for the flowmeters (to each grounding ring [2 per flowmeter]).
- Electrical contractor to provide power wiring and conduits along with 4-20 mA wiring and conduit to Waterboy control panels from flowmeters.
- Temporary effluent piping, fittings & appurtenances from Waterboys to U.V. units:
 - Work for this item shall generally include all piping, fittings & appurtenances from the effluent union installed on each temporary Waterboy unit to the influent flanges on the U.V. disinfection units.
 - Contractor shall provide ball valves, required fittings & appurtenances, air release valving, and effluent static mixer as detailed within the Contract Documents.
 - Costs for this item shall include all required ball valves, butterfly valves, and all associated fittings and appurtenances to install the work as detailed within the Contract Documents.
 - Work shall also include all pressure & leakage testing for the piping/fittings, and disinfection of the system.
 - Work to include any wall supports and/or ceiling supports required to install the pipe & fittings in accordance with Contract Documents and manufacturer's recommendations.
 - Electrical contractor to provide grounding per code meeting the manufacturer recommendations for the flowmeters (to each grounding ring [2 per flowmeter]).
 - Electrical contractor to provide power wiring and conduits along with 4-20 mA wiring and conduit to Waterboy control panels from flowmeters.
- Temporary U.V. units and U.V. control panel:
 - Work for this item shall generally include the installation of (2) Trojan U.V. Swift Units including the fabricated steel frame, and U.V. control panel in accordance with the Contract Documents for temporary treatment. ***The U.V.'s cost for purchase shall be included under the treatment plant line item, and not this work item for temporary treatment.*** Only costs for installation should be included here, as the U.V. units will be moved from temporary treatment to final treatment prior to the final water treatment plant startup.
 - Work shall include manufacturer startup and certification of the U.V. disinfection assembly to ensure proper disinfection is achieved per the Contract Documents for temporary treatment.
 - Electrical contractor to provide power wiring to connect the U.V. control panel and U.V. units in accordance with manufacturers specifications and wire alarm I/O's to Waterboy Control Panel.

- Temporary effluent piping, fittings & appurtenances from U.V. to connect to existing 6" water main (including 16" DR-18 C900 PVC chlorine contact time piping):
 - Work for this item shall generally include all required piping, fittings & appurtenances to install the temporary effluent piping, fittings & appurtenances from the temporary U.V. units to connect to the existing 6" water main, including the 16" DR-18 C900 PVC piping and appurtenances for chlorine contact time as detailed on the Contract Documents.
 - The contractor will include costs to provide insulation, heat trace, steel protection plates and any pipeline protection measures to install the piping, fittings and appurtenances while protecting from the work zone due to equipment likely driving over the intended installation area.
 - All pressure & leakage testing, disinfection, required backfill & embedment, and compaction testing shall be included under this work item for successful installation of the 6" DIP effluent piping, fittings & appurtenances to distribution system limits as detailed on the Contract Documents.
- Temporary ¾" DR-9 CTS HDPE service to temp. chemical building:
 - Work for this item shall generally include furnishing and installing all required materials and appurtenances to install the temporary ¾" DR-9 copper tube sized high density polyethylene (HDPE) service line from the compliance point of the chlorine contact time piping to the laboratory sink installed within the temporary chemical room/laboratory building.
 - The contractor shall include all pressure & leakage testing, disinfection, required heat trace, insulation and any pipeline protection measures for the successful installation of the temporary ¾" DR-9 CTS HDPE service to the temporary chemical treatment building.
- Temporary RPZ and schedule 80 PVC piping, fittings & appurtenances to backwash lines connected to Waterboy units:
 - Work for this item shall generally include installation of the temporary treatment RPZ assembly and backwash supply piping, fittings & appurtenances from the tee installed from the effluent line (outside the temporary treatment building to the backwash feed connections to each of the two Waterboy units in the temporary treatment building (to connect to the 2" threaded tee on the Waterboys as detailed on the Contract Drawings).
 - Any all fittings, appurtenances, air release valves, and flowmeter with grounding rings should be provided and installed under this work item.
 - All pressure & leakage testing, disinfection and manufacturer testing/certification of the RPZ assembly shall be provided under this work item as required to successfully install the RPZ assembly and backwash supply piping, fittings & appurtenances to the temporary Waterboy units.

- Temporary backwash and filter to waste line to pump station:
 - Work under this item should generally include all procurement and installation of the filter to waste line and gravity waste line to the sanitary pump station.
 - All pressure & leakage testing, pipeline insulation and heat trace installation for winter operation, and any pipeline protection measures shall be included under this work item.
- Temporary chemical feed assembly:
 - Work for this item shall generally include the installation of the temporary chemical feed system assembly and chemical plumbing to the influent and effluent static mixers.
 - ***The Town has previously purchased some chemical equipment outside of this contract.*** The contractor shall provide costs to install the temporary chemical equipment assembly and chemical feed piping to the influent and effluent static mixers as shown on the Contract Documents.
 - Electrical contractor shall provide 4-20 mA conduit and wiring from chemical pumps to the control panels to flow pace the chemical feed pumps.
- Temporary particle counter and turbidimeter installation for influent & effluent:
 - Work for this item should generally include installation of the temporary influent and effluent turbidimeters and particle counters including the feed and waste line plumbing as detailed within the Contract Documents.
 - Electrical contractor shall provide receptacles for general contractor to plug power cords from turbidimeters and control panels into.
 - Electrical contractor to run 4-20 mA cables and conduits from turbidimeters and particle counters to Westech Waterboy Control Panel.
- Temporary chlorine analyzer:
 - Work for this item shall generally include the installation of the temporary chlorine analyzer and feed/drain line plumbing, including any required fittings and appurtenances.
 - Electrical contractor shall provide power wiring and conduit for the chlorine analyzer.
 - Electrical contractor shall provide any 4-20 mA cables and conduits from the chlorine analyzer to the Westech Waterboy Control Panel.
- Temporary laboratory sink:
 - Work under this item shall generally include furnishing and installing a temporary laboratory sink to be installed in the temporary chemical room/laboratory building.
 - An electronic sump pump assembly shall be provided to take waste from the sink and particle counters, turbidimeters, and chlorine

analyzers and pump to the sanitary pump station. A separate dedicated sump pump line from the sump to the sanitary pump station will be required (due to siphoning requirements of the Waterboy units for the backwash cycle to function properly).

- The contractor shall provide costs for any pipeline protection, insulation and heat trace needed for winter operation as required for the successful installation of the temporary laboratory sink and sump pump assembly under this work item.
- Temporary laboratory equipment:
 - The contractor shall provide the listed temporary laboratory equipment for this work item as detailed within the Contract Documents.
- Temporary dry hydrant extension connection (for Fire Department access):
 - The work for this item should generally include the installation of an extension during temporary plant construction to extend the dry hydrant for use by the Fire Department if needed during construction. The proposed construction will likely block the dry hydrant, so temporary piping shall be installed so the Fire Department will have access to the dry hydrant during construction operations.
- **Work Item No. C8: Temporary Raw Water Pump Station Shelter**
 - Description:
 - Contractor shall provide a temporary raw water pump station shelter assembly either a prefabricated building or constructed on site as detailed on the Contract Documents.
 - Electrical contractor to provide the general contractor the heater to mount within the temporary raw water pump station shelter.
 - Electrical contractor to provide power wiring and conduits as required to heater to be located in the raw water pump station shelter.
- **Work Item No. C9: Temporary Chemical Room/Laboratory Building**
 - Description:
 - The temporary chemical room/laboratory shall be procured and installed under this work item. The contractor shall provide an insulated prefabricated building, with minimum required dimensions as detailed on Contract Documents.
 - Contractor shall provide lighting, fan & louver ventilation per code requirements and other items as identified on Contract Documents.
 - Electrical contractor to complete wiring/conduit connections for heater and louver power as required.
- **Work Item No. C10: Breakdown & Cleanup of Temporary Treatment and Buildings w/Relocation of Temp. Buildings to Town Highway Garage**
 - Description:
 - Work for this item shall generally include all work as necessary to breakdown and cleanup all of the temporary treatment items including buildings and costs

to haul the temporary treatment buildings (e.g.: temporary laboratory/chemical room building, temporary raw water pump building, and temporary treatment building) to a site location approvable by the Town. Include costs to load and unload the buildings at the Town's chosen site (up to 5 miles, measured one way from the Treatment Plant site).

- Any extra materials resulting from the temporary treatment breakdown shall remain as property of the Town, and shall be hauled at the contractors expense to a Town chosen storage site (up to 5 miles, measured one way from the Treatment Plant site).
- The stone bedding from the temporary buildings shall be removed and hauled at the contractor's expense to a Town chosen storage site (up to 5 miles, measured one way from the Treatment Plant site).
- The asphalt area shall be swept and cleaned so minimal dust and debris exists at the project site in the location of the temporary treatment buildings.

- **Work Item No. C11: Equipment Start-Up/Performance Testing**

- Description:

- Work under this item shall generally include costs required to provide qualified personnel whether from the manufacturer or representative to complete all equipment start-up and performance testing in accordance with the Contract Documents.

- **Work Item No. C12: Pressure & Leakage Testing and Disinfection & Bacteriological Testing**

- Description:

- Pressure & Leakage Testing:
 - Work under this item shall include costs for the Contractor to complete pressure/leakage testing on the water plant piping, buried water piping, and HDPE sanitary force main, as required in accordance with the Contract Documents. The costs shall be included for all aspects of the temporary and final treatment testing items.
 - Disinfection & Bacteriological Testing:
 - Work under this item shall generally include disinfection and bacteriological testing in accordance with the listed AWWA standards and Contract Documents for completion of the work.
 - It is assumed that this will be completed one time for the temporary treatment plant (prior to placing in service), and one time for the final treatment plant and associated piping/appurtenances prior to startup.

- **Work Item No. C13: Erosion & Sediment Controls**

- Description:

- Work under this item shall generally include procurement, installation, upkeep and final removal of any erosion and sediment controls required for completion of the work as detailed on the Contract Documents and as required by the Contractor.

- **Work Item No. C14: Site Restoration**
 - Description:
 - Work for this item shall include all costs associated with final site restoration of the project site including, but not limited to, repaving any areas damaged by heavy equipment/machinery, providing top soil, lime, fertilizer, seed and mulch to any off road areas to be restored.
 - Final restoration shall be in accordance with Contract Documents, and contractor will be required to take preconstruction photographs of the entire project site for comparison to ensure the project site is left in as good or better condition (when compared to preconstruction photos).

- **Work Item No. A1: Rain Garden (See drawing C-12):**
 - Description:
 - Work for this item should generally include the installation of the rain garden as detailed on drawing C-12 and described within the Contract Documents.

- **Work Item No. A2: Tree & Shrub Plantings on Earthen Berm (See drawings C-13 to C-15)**
 - Description:
 - Work for this item should generally include the installation of the tree & shrub plants on an earthen berm as detailed in drawings C-13 through C-15 and described within the Contract Documents.

SECTION 01026

ELECTRICAL CONTRACT BID ITEMS
CONTRACT: TE-2020-E
(BID ITEM DESCRIPTIONS)

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Price make-up.
- B. Elements of Bid Item Description page.
- C. List of Electrical Contract bid items.
- D. Bid Item Descriptions - Attached pages.

1.2. PRICE MAKE-UP

- A. Electrical Contract bid item prices bid by Contractor are deemed to be full compensation for all required labor, products, tools, equipment, plant, transportation, testing, inspection, services, incidentals, administrative procedures, applicable taxes, permit fees, overhead, profit, and other miscellaneous expenses.

1.3. ELEMENTS OF BID ITEM DESCRIPTION PAGE

- A. Identification of lump sum item, as set forth in the Bid Form.
- B. Brief statement of work involved in the item.
- C. Listing of components of work which make-up the item covering each component.
- D. Cross-references to associated work not included in the item.

1.4. LIST OF ELECTRICAL CONTRACT BID ITEMS - CONTRACT NO. TE-2020-E

Table 1: Electrical Contract Base Bid

Bid Item No.	Description	Cost Basis	Bid Price (in figures)
E-1	Mobilization, Demobilization, Bonds & Insurance	Lump Sum	\$
E-2	Temporary Electrical Work	Lump Sum	\$
E-3	Water Plant Electrical Installation	Lump Sum	\$
E-4	Existing Generator & ATS Removal, New Generator/Transfer Switch & Electrical System Installation	Lump Sum	\$
		Base Bid Total (In Figures)	\$

1.5. BID ITEM DESCRIPTIONS

- A. Bid Item Description pages are attached at the end of this specification section.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

Electrical Contract – TE-2020-E
Bid Item Descriptions

General Notes for All Work Items:

1. Work for each listed work item shall generally include, but is not necessarily limited to, all equipment procurement, equipment installation, startup, performance testing, commissioning, training, operation and maintenance manuals, and all field services by equipment manufacturer/supplier for the work as described within the Contract Drawings.
2. The work item descriptions are not all inclusive, and the Contractor shall attend the mandatory pre-bid meeting, submit any request for information (RFI), and make their own judgements on the scope of work required to successfully complete the project in accordance with the Contract Documents.

Electrical Contract Description of Work:

- The work generally includes but is not necessarily limited to: Selective demolition to occur with the new temporary and permanent electrical installation. The existing building will receive a new 435 square foot addition, including a new precast concrete hollow core plank roof and concrete floor within the new addition and the remaining building structure. The E.C. shall protect all electrical equipment from weather as required during the roof and floor demolition and new construction. The new addition will include an ADA restroom, chemical storage room and expansion of the existing pump room. The existing building site is very small with Lake Champlain adjacent on 2 sides and because of this, a high level of coordination shall be maintained between building operations, all trades, other contracts, existing utilities remaining, excavation of new underground utilities and construction of the new building addition.
- Demolition shall be coordinated with the general contractor, water treatment operator, Owner and Engineer. A current temporary water treatment system with-in an on-site shed shall be in operation during the demolition and new construction scope of work. The electrical contractor will provide temporary electrical service to this shed during building demolition and new construction. Selective electrical demolition shall proceed after temporary electrical service is in place and energized. Coordinate electrical disconnection and removal of the existing process equipment, loose equipment, electrical fixtures, panels and process panels within the building with the general contractor.
- Remove the overhead pump station feeders from the exterior pump station panel and re-route the feeders outside to allow for the demolition and new construction. Reconnect to the underground feeders on the west side of the building.
- Remove the existing wall mounted electrical fixtures, panels, wiring trough, meters, receptacles, disconnects, transfer switch, etc. to allow demolition and construction of the new wall construction.
- Disconnect all below slab feeders within the building for removal by the G.C.
- Provide electrical power to the temporary pump station shelter, including lighting, heat, raw water pump, disconnect, GFCI receptacle and electrical heat tracing and control.
- Provide electrical power to the temporary Chemical Room Lab, including panel, lighting, heat, ventilation, and GFCI receptacle power.
- Provide electrical power to the existing pilot plant, including feeder to existing panel, Water Boys, UV, control panels, lighting, heat, ventilation, and GFCI receptacle power.

- Provide electrical power to the wastewater pump station, including underground feeder, disconnects, mounting of control panel (supplied by G.C.) pressure treated pedestal installation and level float conduits and conductors per the electrical contract drawings.
- Provide permanent electrical installation for the reconstructed water plant building per the electrical contract drawings.
- Provide all underground electrical conduit, feeders and splices per the electrical contract drawings.
- Provide all heating and ventilation per the electrical contract drawings.
- Contractor shall provide shop drawings for approval of the louvers and fans as a priority for the openings in the new concrete walls provided by the General Contractor. This is to be submitted as soon as possible as to not delay the concrete wall construction, shop drawings and construction by the general contractor.
- Provide all interior and exterior lighting per the electrical contract drawings.
- Provide power to the Uphill and Lakeside Pavilions.
- Remove existing 40 kw diesel generator/tank and provide new 100kw diesel generator/tank, automatic transfer switch package installation. Provide fuel removal /transfer from existing diesel generator.
- Provide all excavation, backfill and compaction required for underground electrical installations.
- Provide all grounding required by the N.E.C., local codes and AHJ.
- Provide all electrical inspections required.

Electrical Contract Bid Item Descriptions:

Bid Item E-1: Mobilization, Demobilization, Bonds & Insurance

- Description:
 - Work shall generally include but is not necessarily limited to:
 - Mobilization
 - Demobilization
 - Insurance and Bonds (General & Supplementary Conditions)
 - Summary of Work (Section 01010)
 - Contract Considerations (Section 01019)
 - Coordination and Meetings (Section 01039)
 - Submittals (Section 01300)
 - Progress Schedules (Section 01310)
 - Construction Documentation (Section 01380)
 - Preconstruction photographs
 - Construction photographs
 - Quality Control (Section 01400)
 - Temporary Facilities (Section 01500)
 - Maintenance of Traffic (Section 01550)
 - Contract Closeout (Section 01700)

Bid Item E-2: Temporary Electrical Work

- Description:

- Intercept Existing Below Grade Incoming Service and Provide all Equipment (including, but not limited to), Temporary Panels, Safety Switches, Transformers, Conductors, Grounding, Devices, Conduit, Telecommunications, Installation and Inspections as required on Temporary One-Line Diagram and for Temporary Water Treatment Building (Existing Pilot Plant).

Bid Item E-3: Water Plant Electrical Installation

- Description:

- Provide Permanent Incoming Service, all Equipment (including, but not limited to), Panels, Safety Switches, Transformers, Conductors, Grounding, Devices, Conduit, Heating and Ventilation Systems, Lighting, Telecommunications, Installation and Inspections as required for New Water Plant One-Line Diagram and Electrical Drawings

Bid Item E-4: Existing Generator & ATS Removal, New Generator/Transfer Switch & Electrical System Installation

- Description:

- Provide Disconnection and removal of Existing 40 kw Generator and ATS, Provide and Install New 100 KW Diesel Generator & Automatic Transfer Switch Package (including, but not limited to) 100KW Generator, 400A ATS, all safety devices, heater, charger, Conductors and conduit as required for a complete and operable system.

SECTION 01039

COORDINATION AND MEETINGS

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Coordination.
- B. Field engineering.
- C. Preconstruction conference.
- D. Site mobilization conference.
- E. Progress meetings.
- F. Connection conference.

1.2. COORDINATION

- A. Coordinate scheduled work sequences and related operations beforehand with appropriate local, county, or state officials and agencies including affected property owners, when Project is to be located in or adjacent to a public right-of-way.
- B. Coordinate scheduling, submittals, and Work of the various Specification sections to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- C. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections in preparation for Substantial Completion and for portions of work designated for Owner's partial utilization.
- G. After Owner use of facilities, coordinate access to Site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.3. FIELD ENGINEERING

- A. Control datum for survey work is that provided by Engineer as shown on the Drawings.
- B. Engineer will provide one control point of an existing structure.

- C. Engineer reserves right to inspect or check results of Contractor field engineering services specified herein for conformance with the Contract Documents.
- D. Contractor shall provide field engineering services as follows:
 - 1. Employ a land surveyor licensed in the State of New York.
 - 2. Protect all control and reference points. Accurately replace any such point which is damaged or moved.
 - 3. Provide correct lines, grades, locations and elevations for construction of all Project components.
 - 4. Provide correct information for preparation of Project record documents.
 - 5. Submit a copy of a registered Site drawing and certificate signed by the land surveyor who provided field engineering services that the locations and elevations of the Work are in conformance with the Contract Documents.

1.4. PRECONSTRUCTION CONFERENCE

- A. Engineer will schedule a conference after the Effective Date of Agreement.
- B. Attendance Required - Owner, Engineer, Contractor, the NYS Department of Transportation, and the County Department of Health.
- C. Agenda
 - 1. Distribution of extra sets of Contract Documents.
 - 2. Submission of list of Subcontractors, list of products, Schedule of Submittals, Schedule of Values, and Progress Schedule.
 - 3. Designation of personnel representing the parties in contract, and Engineer.
 - 4. Procedures and processing of field decisions, submittals, substitutions, Applications for Payments, proposal requests, Change Orders and Contract closeout procedures.
 - 5. Scheduling.
 - 6. Scheduling activities of testing laboratory.
 - 7. Requirements of regulatory agencies.
 - 8. Use of premises by Owner and Contractor.
 - 9. Temporary facilities to be provided by Owner; and by Contractor.
 - 10. Procedures for testing.
 - 11. Procedures for maintaining record documents.
 - 12. Maintenance of vehicular and pedestrian traffic.
 - 13. Periodic cleanup of Site.

14. Notification of utilities' owners.

D. Engineer will record minutes and distribute copies to participants.

1.5. SITE MOBILIZATION CONFERENCE

A. Engineer and Owner will schedule a conference at the Project site prior to Contractor occupancy.

B. Attendance Required - Owner, Engineer, the NYS Department of Environmental Conservation (if required), Department of Health, Contractor, Contractor's superintendent, and major subcontractors.

C. Agenda

1. Use of premises by Owner and Contractor.

2. Owner's requirements and partial occupancy.

3. Construction facilities and controls provided by Owner.

4. Temporary utilities provided by Owner.

5. Survey layout.

6. Security and housekeeping procedures.

7. Schedules.

8. Procedures for testing.

9. Procedures for water main breaks during construction.

10. Procedures for maintaining record documents.

11. Requirements for disinfection of equipment.

12. Inspection and acceptance of water mains put into service during construction period.

13. Requirements of regulatory agencies.

D. Record minutes and distribute copies within 10 days after meeting to participants and to those affected by decisions made.

1.6. PROGRESS MEETINGS

A. Engineer will schedule and administer meetings throughout progress of the Work at maximum monthly intervals.

B. Engineer will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within 10 days to participants, and those affected by decisions made.

C. Attendance Required - Engineer, job superintendent of each prime Contractor, major Subcontractors and Suppliers, as appropriate to agenda topics for each meeting.

D. Agenda

1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems which impede planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of Progress Schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on Progress Schedule and coordination.
13. Other business relating to Work.

1.7. CONNECTION CONFERENCE

- A. Engineer will schedule a coordinating conference at least 14 days prior to connection to the existing distribution system or major milestone items.
- B. Attendance Required - Owner, Engineer, Contractor, and job superintendent.
- C. Agenda
1. Determine status of equipment.
 2. Ascertain presence of materials required to be at site for connection procedure.
 3. Review responsibilities of Owner and Contractor.
 4. Establish connection procedure; develop schedule(s) when appropriate.
 5. General coordination of all aspects of connection.
- D. Engineer will record minutes of meeting and distribute copies within five days to participants.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Submittal procedures.
- B. Schedule of submittals.
- C. Shop drawings.
- D. Manufacturer's instructions.

1.2. SUBMITTAL PROCEDURES

- A. Transmit each required submittal using Engineer accepted form.
- B. Number the submittals as follows:
 - 1. First: Specification section number.
 - 2. Submittal number within the Specification section.
 - 3. Review cycle number.
 - 4. Title of submittal.
 - 5. For example:
 - a. 15073-01-01 – Field lock gaskets for DIP (first review cycle)
 - b. 15073-01-02 - Field lock gaskets for DIP (second review cycle)
 - c. 15073-02-01 – Flange pipe and fittings (first review cycle)
 - d. 15073-02-02 – Flange pipe and fittings (second review cycle)
 - e. 15073-02-03 – Flange pipe and fittings (third review cycle)
- C. Identify Project, Contractor, Subcontractor, and Supplier; pertinent Drawing number and detail number(s), and Specification sections, as appropriate.
- D. Apply stamp, signed or initialed providing certification required by General Condition Article 7.16.A.2. At a minimum, stamp shall include the following information:
 - 1. Submittal Number _____
 - 2. Deviations: None _____; As Listed _____
 - 3. Reference Specification Section _____
 - 4. Reference Drawing Number _____
 - 5. Space Requirement: As Designed _____ Different, As Listed _____
 - 6. Representation is made to Owner and Engineer that Contractor has satisfied the

requirements of General Conditions Article 7.16.A.1.a through d, associated
Supplementary Conditions, and that the Contractor hereby approves this submittal.

Contractor _____

Signature _____

Date _____

- E. Schedule submittals to expedite the Project, and deliver to parties in the quantities and at the locations specified herein.
- F. Identify deviations from Contract Documents in accordance with General Conditions Article 7.16.A.3.
- G. Identify product and/or system limitations which may be detrimental to successful performance of the completed Work.
- H. Identify space requirements which differ from those designed and/or shown on the Contract Documents.
- I. Provide space for Contractor and Engineer review stamps.
- J. Revise and resubmit in accordance with General Conditions Article 7.16.E. Identify all changes made since previous submittal in a cover letter or memorandum.
- K. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.
- L. Submittals not required will not be recognized or processed.
- M. Items shall not be fabricated or delivered without fully approved Shop Drawings.
- N. Ensure no associated work begins until associated Shop Drawings are fully approved.
- O. Fabrication prior to receiving an "Approved" or "Approved as Corrected – No Resubmittal Required" is at Contractor's risk.

1.3. SCHEDULE OF SUBMITTALS

- A. Submit three copies of preliminary Schedule of Submittals in accordance with General Conditions Article 2.05.
- B. Revise and resubmit until acceptable to Engineer.

1.4. SHOP DRAWINGS

- A. Provide information in accordance with General Conditions Article 7.16 as supplemented herein and as required by individual Specification sections.
- B. Shop Drawing submittals shall include all descriptive data, performance characteristics, material specifications, spare parts list, drawings, piping diagrams, wiring schematics, and shall be complete and accurate to indicate item-by-item compliance with the Contract Documents.
- C. Shop Drawings shall be drawn at scales matching those on the Drawings depicting the same items.

- D. All catalog cuts, manufacturer's specifications, drawings, and verbal descriptions shall be clearly marked to allow identification of the specific products used.
- E. If the submittal deviates from the requirements of the Specifications in any way, it shall be clearly marked in the submittal with the justifying reason stated for evaluation by Engineer.
- F. Submit five opaque reproductions to Engineer, three copies of which will be retained by the Engineer.

1.5. MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, in quantities specified for shop drawings.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01310
PROGRESS SCHEDULE

PART 1 GENERAL

1.1. SUMMARY

- A. This Specification section covers the development and utilization of the Progress Schedule. In the event of conflicts or discrepancies with any other provisions of the Contract Documents relating to such, this section shall govern. Contractor shall notify Engineer immediately, in writing, in the event of any conflict or discrepancies identified with any other provisions of the Contract Documents relating to such.

1.2. DEFINITIONS

- A. Terms used herein shall be in accordance with the definitions set forth in the Associated General Contractor's of America (GCA) publication, "Construction Planning & Scheduling".

1.3. BASIC REQUIREMENTS

- A. Schedule and monitor all Work using Critical Path Method (CPM) techniques. Scheduling software shall be Microsoft Project.
- B. Progress Schedule shall be maintained throughout entire Contract and shall be used by Contractor to schedule, plan, organize, and execute the Work.
- C. Progress Schedule shall:
 - 1. Comply with Contract Times identified in the Agreement.
 - 2. Reflect all mandated sequencing identified in Contract Documents.
 - 3. Include adequate time for Engineer's review of submittals. Under no circumstances will the progress schedule be allowed to include Engineer review times shorter than those prescribed in Section 01300, Submittals and individual Specification sections. The need for resubmittals based on Engineer's review will not entitle Contractor to Contract Time extensions and the Progress Schedule must include adequate time for resubmittals.
 - 4. Include time required by Contract Documents based on work days lost due to inclement weather.
 - 5. Progress Schedule shall include adequate time for testing and startup.
- D. Each activity, except Notice to Proceed, shall have at least one predecessor. Each activity, except final completion, shall have at least one successor.
- E. Construction activities shall have a maximum duration of 20 work days. All durations shall be developed based on definitive manpower and resource planning.
- F. Float is not for the exclusive benefit of the Owner or Contractor and must be used in the best interest of the Project in order to maintain Contract Times. Contractor will not be allowed to sequester float through such strategies as extended activity durations, extensive crew/resource sequencing, etc.

1.4. SUBMITTALS

- A. Submit the following in accordance with the procedures identified in Section 01300, Submittals:
 - 1. Preliminary 90-Day Progress Schedule
 - a. Submit one electronic version on compact disc and three 11-inch x 17-inch hard copies of bar chart within time frame identified in General Conditions Article 2.05.A.1.
 - b. Bar chart shall show the following for each activity:
 - 1) Activity ID
 - 2) Activity description
 - 3) Original duration
 - 4) Early start
 - 5) Early finish
 - 2. Detailed Baseline Progress Schedule
 - a. Submit one electronic version on compact disc and three 11-inch x 17-inch hard copies of bar chart within 30 days after acceptance of preliminary Progress Schedule.
 - b. Bar chart shall clearly identify the critical path and shall provide a tabulated listing of the following for each activity:
 - 1) Activity ID
 - 2) Activity description
 - 3) Original duration
 - 4) Percent complete
 - 5) Remaining duration
 - 6) Early start
 - 7) Early finish
 - 8) Late start
 - 9) Late finish
 - 10) Total float

1.5. PROGRESS SCHEDULE ARCHITECTURE

- A. Each activity in the Progress Schedule shall include:

1. A unique activity identification (ID) number
 2. Activity description
 3. Original Duration
 4. Responsibility code assigning activities to Contractor, Subcontractors, Engineer, Owner, or other entity.
- B. Calendars - At a minimum, establish the following calendars:
1. Work day calendar excluding all holidays identified in the Contract Documents.
 2. Calendar days for activities with durations based on calendar days.
- 1.6. PRELIMINARY 90-DAY PROGRESS SCHEDULE
- A. Include the following:
1. Detailed activities with associated logic for first 90 days after Notice to Proceed. The Preliminary 90-Day Progress Schedule shall include, but not be limited to, mobilization, site work, demolition, key procurement activities (i.e., submissions, approvals, fabrication and delivery) and all other work that will occur in the first 90 days after Notice to Proceed.
 2. The balance of the Work shall be shown in a summary log and shall include a summary of activities for construction of each proposed system.
- 1.7. DETAILED BASELINE PROGRESS SCHEDULE
- A. Baseline Progress Schedule shall include no activity progress.
- B. Incorporate 90-day preliminary Progress Schedule.
- C. Provide sufficient detail to allow use for planning, scheduling, and control all Work included in Contract. The degree of detail shall be to the satisfaction of the Engineer, and shall account for the following Project specific items:
1. Structural breakdown of Project.
 2. Required phasing.
 3. Milestones.
 4. Maintaining operation of existing facilities.
 5. Subcontractor work plans.
 6. Crew flows and sizes.
 7. Access to site and work areas.
 8. Identification of coordination between Contractor, subcontractors, and suppliers.
 9. Testing and disinfection/connection.

10. Service transfer.
- D. In addition to a breakdown of physical construction activities specified herein, include activities for the following:
1. Submittals
 2. Engineer's review of submittals
 3. Fabrication and delivery of materials and equipment
 4. Finish milestone activity for all Functional Tests associated with a given system.
- E. The accepted baseline Progress Schedule will form the basis of the first monthly update.

1.8. SCHEDULING MEETINGS

- A. Attend monthly meetings with Engineer one week prior to submitting monthly Progress Schedule updates.
- B. Review proposed activity progress completed during the period, current status of the Project, planned work for the next period, and areas where Contractor needs to coordinate with Owner and/or Engineer.

1.9. REVISIONS

- A. Engineer will be the custodian of all official versions of the Progress Schedule including the 90-Day Preliminary Progress Schedule, the baseline Progress Schedule, and each acceptable subsequent monthly update included with Applications for Payment.
- B. The Owner, Engineer, and Contractor shall have the right to propose revisions to the Progress Schedule if it is deemed to be in the best interest of the Project.
- C. All Owner, Engineer, and Contractor proposed revisions must be submitted to each party no later than seven days prior to the date by which Contractor must submit monthly updates in order for proposed revisions to be considered for that update.
- D. Objections to Proposed Revisions:
1. If Owner, Engineer, and/or Contractor object to proposed revisions made by any other party, the objecting party shall provide written notice to each other party within seven days of receipt of proposed revisions, stating objections.
 2. Proposed revisions that are not mutually agreeable shall be discussed at the monthly scheduling meetings.
- E. Engineer shall have final say on acceptance or rejection of all proposed Progress Schedule revisions based solely on requirements of the Contract Documents.
- F. All Engineer accepted revisions will be incorporated into the next Progress Schedule update.

1.10. RECOVERY SCHEDULES

- A. If Contractor fails to achieve planned progress, as indicated in the Progress Schedule, and lack of progress delays the critical path or an intermediate Milestone by more than 10 work

days, submit a proposed recovery schedule to Engineer identifying how Contractor will recover lost time.

- B. Failure to submit a recovery schedule and failure to cooperate with the Owner and/or Engineer in the recovery schedule process shall allow Owner the right to order Contractor to increase manpower to recover lost time, without adjustment to the Contract Price. Furthermore, Owner has the right to withhold progress payments until such time as Contractor's progress is brought into compliance with Progress Schedule.

1.11. DELAYS AND EXTENSIONS OF CONTRACT TIMES

- A. When Contractor believes that Contract Times will be delayed by circumstances outside of its control, Contractor shall include the following with its notice of claim:
 - 1. Summary of all requested extensions to Contract Times.
 - 2. Cause of the delay, actions Contractor proposes to take to minimize delays, and actions Contractor proposes for Owner and/or Engineer to minimize delays.
- B. Engineer will review each claim. If acceptable to Engineer, Engineer will provide written notice to Owner within 14 days of submission, copying Contractor on correspondence, recommending that the change should be incorporated into the Progress Schedule and a Change Order should be issued providing requested extension of Contract Times. Owner will provide written notice to Contractor within 14 days of receipt of Engineer's recommendation, either concurring or denying Engineer's recommendation.
- C. If a claim submittal is not acceptable to Engineer, Engineer will provide written notice to Contractor identifying deficiencies with claim. Contractor will have 7 days from receipt of Engineer's written notice to submit a revised claim.
- D. Contract Time extensions will only be considered for events that impact Contract Times as demonstrated by acceptable claims.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01380

CONSTRUCTION DOCUMENTATION

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Construction photographs.

1.2. DESCRIPTION

- A. Take construction record photographs prior to mobilization and periodically during the course of the Work.
- B. The General Contractor & Electrical Contractor shall provide construction documentation in specified in this section unless otherwise noted.

1.3. CONSTRUCTION PHOTOGRAPHS

- A. Digital construction photographs shall be taken at each of the major stages on construction listed below and shall be furnished to Engineer and Owner with each Application for Payment.
 - 1. Site before mobilization.
 - 2. Completion of hydrants and valves prior to backfilling.
 - 3. Existing condition of each driveway.
 - 4. Completion of work at each driveway.
 - 5. Completion of excavations for each road crossing.
 - 6. Testing of all piping, equipment, and systems.
 - 7. Completion of site restoration and landscaping.
- B. Views and Quantities Required - One view of each item.
- C. Camera used for digital photography shall be a 6.0 megapixel or greater.
- D. Electronic Copies
 - 1. Maintain database of pictures for the entire length of the Project.
 - 2. Each month, provide two CDs with electronic versions of all prints taken in the past month.
 - 3. Provide two CDs with electronic versions of all prints taken in during the course of the Project (in .jpg format) with final Application for Payment.

4. All electronic copies of photos shall be in .jpg format. All electronic copies of photos shall be arranged on CDs by date and subject. Each .jpg photo file name shall include the subject description and date.

1.4. REUSE OF CONSTRUCTION DOCUMENTATION

- A. All construction documentation furnished to Owner shall become the property of the Owner and cannot be copyright or otherwise protected in a manner that prevents free reuse by either the Owner and/or Engineer.

PART 2 PRODUCTS

2.1. PRINTS

- A. Digital Progress Photos
 1. Printer
 - a. Printer shall be designed to print digital photos.
 - b. Printer shall have a minimum 4800 x 1200 dpi resolution.
 2. Color Prints
 - a. Paper - Single weight, smooth, photo-quality paper.
 - b. Finish - Smooth matte-finish.
 - c. Size - 8-inch x 10-inch.
 - d. Enclosure - Each print shall be provided in an acid-free plastic sleeve, three hole punched, for insertion into a three ring binder. Provide a suitable quantity of three-ring binders for containing all prints, labeled on the front and spine of the binder with the name and Owner's Contract number.
 3. Identify each print on front, listing:
 - a. Name and Owner's Contract number.
 - b. Subject and orientation of view (for example, "125 Main St., looking north").
 - c. Date and time of exposure.
 - d. Contractor's numbered identification of exposure (i.e., December 2020, Photo #1).

PART 3 EXECUTION

3.1. DELIVERY OF PRINTS

- A. Preconstruction photos and negatives shall accompany the first Application for Payment. This Application for Payment will not be approved without receipt of such materials.

- B. Monthly construction photos (in both print and CD format) shall accompany each monthly Application for Payment. Monthly Applications for Payment will not be approved without receipt of such materials.
- C. Final construction photos and negatives shall accompany the final Application for Payment. This Application for Payment will not be approved without receipt of such materials.

END OF SECTION

SECTION 01400
QUALITY CONTROL

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Quality assurance and control of installation.
- B. References and standards.
- C. Tolerances.
- D. Inspection and testing services.
- E. Testing by Contractor.
- F. Manufacturers' field services and reports.

1.2. QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over Suppliers, manufacturers, products, services, Site conditions, and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers' instructions.
- C. Verify that field measurements are as indicated on Shop Drawings and as instructed by the manufacturer.
- D. If manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- E. Comply with specified standards as a minimum quality for the Work except when code requirements or equipment manufacturer requires more stringent standards.
- F. Perform Work by persons qualified to produce workmanship of specified quality.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion and disfigurement.

1.3. REFERENCES AND STANDARDS

- A. For products and workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified and/or are required by applicable codes.

1.4. TOLERANCES

- A. Monitor fabrication and installation tolerance control to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. If manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

- C. Adjust products to appropriate dimensions; position before securing products in place.

1.5. TESTS AND INSPECTIONS

- A. Contractor shall employ and pay for the services of an independent testing laboratory to perform inspections, tests, and approvals as indicated in General Conditions Article 14.02.D.
- B. Independent testing laboratory will:
 - 1. Perform inspections, tests, and other services specified in the individual specification sections and as required by Engineer and Owner.
 - 2. Perform inspecting, testing, and source quality control which may occur on or off project site, as required by Engineer or Owner.
 - 3. Prepare and submit reports to the Engineer, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents. Engineer will forward copy of report(s) to Contractor.
- C. Contractor shall:
 - 1. Cooperate with independent firm; furnish samples of materials; furnish design mix, equipment, tools, storage and assistance as requested.
 - 2. Notify Engineer and independent firm 48 hours prior to expected time for operations requiring services.
 - 3. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's own use.
- D. Retesting required because of non-conformance to specified requirements shall be performed, on instructions by the Engineer, by the same independent firm which performed the initial tests and inspections, whether employed by Owner or Contractor.
- E. Costs for retesting and re-inspection will be deducted from progress payments to Contractor.

1.6. MANUFACTURERS' FIELD SERVICES

- A. When additional manufacturer services are specified in other individual Specification sections, require material or product Suppliers or manufacturers to provide qualified personnel to observe Site conditions, conditions of surfaces and installation, quality of workmanship, testing and adjusting, as applicable, and to initiate instructions when necessary.
- B. Report observations, Site conditions, or instructions given to applicators or installers, that are supplemental or contrary to manufacturers' written instructions.
- C. Submit report to Engineer within 30 days of observation.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Continuity of service.
- B. Temporary Utilities - Electricity, lighting, heating, cooling, telecommunications service, water, and sanitary facilities.
- C. Temporary Controls - Barriers, enclosures and fencing, protection of the Work, water control and pollution controls.
- D. Construction Facilities - Access roads, parking, maintenance of traffic, and progress cleaning.

1.2. CONTINUITY OF SERVICE

- A. Provide temporary equipment including pumps, piping, valves, bulkheads, electrical equipment and all system components necessary to maintain the existing facilities in service during construction.
- B. Provide temporary power, instrumentation, controls, and alarms necessary to assure continued facilities operation during the alterations of existing facilities components or installation of new equipment.
- C. Construction may require the closing of various gates and valves to isolate lines and services. The Owner does not guarantee that the existing gates and valves will be completely watertight. It is the Contractor's responsibility to take whatever measures are necessary to proceed with construction in the event that valves or gates leak.
- D. Provide temporary access required, including ladders, platforms, grating, walkways, and awais which comply with OSHA laws, for necessary facilities operations.
- E. Provide all line stops, wet taps and temporary bypass piping and valves required to connect new piping to existing piping, unless otherwise specified.
- F. No extra payment shall be made for any labor, materials, tools, equipment or temporary facilities required during construction. All costs therefore shall be considered to have been included in the Bid.

1.3. TEMPORARY ELECTRICITY

- A. General Contractor shall provide and pay for power service required from utility source for Contractor operations, including equipment, job trailers, etc.

1.4. TEMPORARY LIGHTING

- A. General Contractor shall provide and maintain lighting for Contractor operations to achieve:

1. A minimum lighting level of 2 watt/sq.ft. for construction operations.
 2. 1 watt/sq.ft. lighting to exterior staging and storage areas after dark for security purposes.
- B. General Contractor shall maintain lighting and provide routine repairs.
- C. Permanent building lighting may not be utilized during construction.

1.5. TEMPORARY HEATING

- A. Existing facilities shall not be used.
- B. General Contractor shall provide and pay for heat devices and heat as required to maintain specified conditions for Contractor's construction operations.
- C. General Contractor shall maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in individual specification sections.

1.6. TEMPORARY COOLING

- A. Existing facilities shall not be used.
- B. General Contractor shall provide and pay for cooling devices and cooling as needed to maintain specified conditions for Contractor's construction operations.
- C. Maintain maximum ambient temperature of 80 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

1.7. TELECOMMUNICATIONS SERVICE

- A. Contractor shall provide, maintain and pay for telecommunications service to its field office and for Engineer's field representative for the duration of the contract. Telephone services shall be paid for completely by Contractor including all connection fees, monthly fees (phone and internet), local and long distance usage charges, taxes and all other telecommunications services provided under this contract.
- B. Provide direct line telephone services to Engineer for the duration of the contract as follows:
1. One dedicated telephone line with call waiting.
 2. One dedicated fax line.
- C. Provide high speed internet service to Engineer's field trailer as follows:
1. Internet service shall include modem, cables, installation, and all other equipment necessary for a complete functioning system.
 2. Internet service shall be available for use within two weeks of Contractor's mobilization.
 3. Coordinate all maintenance and repairs to the system for the duration of the Contract. No components shall be out of service for more than 24 consecutive hours.

D. Provide telephone equipment as follows:

1. Two DECT 6.0 cordless telephones by AT&T or equal. Phones shall be two line, pushbutton, and equipped to record and play back incoming messages using a device which can be switched into service during Engineer's absence. The answering device shall answer a call on the first ring, provide a prerecorded outgoing message, and then record the caller's incoming message.
2. One plain paper facsimile/printer/copy machine by Cannon. Provide paper and toner for the duration of the Contract. The machine shall have a minimum 100-sheet capacity and minimum of 10 programmable preset fax numbers.
3. Contractor shall be responsible for servicing the aforementioned equipment. No components shall be out of service for more than 24 consecutive hours.

1.8. CELLULAR PHONE

- A. Provide, maintain, and pay for a smart phone with internet service to be exclusively used by Resident Project Representative for the duration of the contract. General Contractor shall pay for all costs associated with the use of the cellular phone, including unlimited voice, voice mail, email, text, and data plans with uninterrupted service over the entire project area and surrounding locality.

1.9. TEMPORARY WATER SERVICE

- A. Provide and maintain suitable quality water service required for Contractor's construction operations and those of other contractors.
- B. Extend branch piping with outlets located so water is available by hoses with threaded connections for use by all Contractors. Provide temporary pipe insulation to prevent freezing as necessary.
- C. Each Contractor shall provide sufficient potable quality drinking water for workers at the project site.

1.10. TEMPORARY SANITARY FACILITIES

- A. General Contractor shall provide and maintain required sanitary facilities and enclosures for use by all persons employed at the Site. Provide at time of mobilization. Existing facilities shall not be used.
- B. General Contractor shall remove facilities from site at end of construction.
- C. Facilities shall be maintained in conformance with applicable State Regulations and Local ordinances. Contents shall be removed and disposed of in satisfactory manner by General Contractor as occasion requires.
- D. Contractor shall enforce sanitary regulations amongst employees and take precautions against infectious diseases as deemed necessary. Isolate infected employee(s) and arrange for immediate removal of such person(s) from site.

1.11. BARRIERS

- A. General Contractor shall provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Provide protection for plant life designated to remain. Replace damaged plant life.
- D. Protect vehicles, stored materials, Site and structures from damage.
- E. Supplement barriers with suitable signs, railings and night lights, as necessary to conform with governing authorities and regulations.

1.12. FENCING

- A. General Contractor shall provide 6-foot high fence around construction; equip with vehicular and pedestrian gates with locks.
- B. Construction - Commercial grade chain link fence.

1.13. WATER CONTROL

- A. General Contractor shall grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect Site from puddling or running water. Provide water barriers as required to protect Site from soil erosion.

1.14. EXTERIOR ENCLOSURES

- A. General Contractor shall provide temporary insulated weather-tight closure of exterior openings to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual Specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.15. PROTECTION OF INSTALLED WORK

- A. Each Contractor shall protect his installed Work from damage and deterioration due to construction activities, traffic, birds, pests, vermin, wild-life, pets, pedestrians, visitors, vandals, dust, vapors, floods, precipitation, driving rain, wind, snow storms, melting temperatures, or freezing temperatures; provide special protection where specified in individual Specification sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to minimize damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic over landscaped areas. Provide adequate barriers, directional signs, and/or guards, if necessary to provide adequate protection of landscaped areas.
- G. Owner reserves right to order that additional protective measures be taken beyond those proposed by Contractors, to safeguard the existing facilities and Work at no additional cost to Owner.

1.16. SECURITY

- A. General Contractor shall provide security and facilities to protect his Work and that of other contractors, including existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate security measures taken with Owner's own security program.

1.17. ACCESS ROADS

- A. General Contractor shall provide and maintain temporary access roads to the staging area as follows:
 - 1. Construct roads on Owner's property to connect public thoroughfare(s) with construction area.
 - 2. Roads shall be free for use by all personnel involved in Project, and be adequate for transportation of persons, materials, equipment and products to construction area.
 - 3. Maintain roads in serviceable condition, free of obstructions, potholes, ponded water, debris, accumulated snow and ice, until completion of project or until permanent access roads are installed.
- B. Designated existing on-site roads may be used for construction traffic.

1.18. PARKING

- A. Contractor shall coordinate parking areas with Owner.
- B. Contractor shall arrange for temporary gravel surface parking areas to accommodate all construction personnel involved with Project.
- C. When Site space is not adequate, General Contractor shall provide additional off-site parking.
- D. Do not allow vehicle parking on existing residential streets.
- E. Designate one parking space for the Engineer and identify same with appropriate signs for each space.

1.19. MAINTENANCE OF TRAFFIC

- A. General Contractor shall maintain and regulate traffic within Contract Limits in accordance with applicable state, county, and local regulations, and Section 01550.

1.20. PROGRESS CLEANING

- A. General Contractor shall maintain areas free of waste materials, debris, and rubbish. Maintain Site and structures in a clean and orderly condition, as follows:
 - 1. Remove debris and rubbish from pipe chases, plenums, attics, crawlspaces, and other closed or remote spaces, prior to enclosing the space.
 - 2. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
 - 3. Collect and remove waste materials, debris, and rubbish from Site weekly and dispose of off-site.
- B. Each Contractor shall store unused tools and equipment at its yard or base of operations.

1.21. POLLUTION CONTROLS

- A. Dust Control
 - 1. Each Contractor shall execute Work by methods to minimize raising dust from construction operations.
 - 2. Provide positive means to prevent air-borne dust from dispersing into atmosphere.
 - 3. Wash down disturbed areas daily.
 - 4. Implement best management practices in accordance with requirements of agencies have jurisdiction over dust control.
- B. Erosion and sediment control shall be provided in accordance with the Contract Documents, the requirements of governing regulatory agencies, and Section 01564.
- C. Noise Control
 - 1. All construction equipment and tools exhibiting potential noise nuisance shall be provided with noise muffling devices.
 - 2. Confine use of such equipment and tools between the hours of 8:00 a.m. and 5:00 p.m.
 - 3. Implement best management practices in accordance with requirements of agencies having jurisdiction over noise control.
- D. Pollutants Control - Provide methods, means and facilities to prevent contamination of soil, water and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

1.22. REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Respective Contractors responsible for temporary utilities, facilities, and controls shall remove temporary utilities, equipment, facilities, controls, materials prior to Final Application for Payment.

- B. Remove temporary barriers, enclosures, etc. in concert with completion of those segments of Work which no longer require such measures.
- C. Remove temporary underground installations to a minimum depth of 2 feet. Grade site as indicated.
- D. Clean and repair damage caused by installation or use of temporary work.
- E. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.23. CONTRACTOR'S FIELD OFFICE

- A. Provide weathertight field office with lighting, electrical outlets, heating, cooling and ventilating equipment, and equipped with sturdy furniture, drawing rack, drawing display table, and filing cabinets for Contractor's use.

1.24. ENGINEER'S FIELD OFFICE

- A. Provide and maintain a weathertight field office for exclusive use of Engineer with lighting, electrical outlets (one for each wall), permanent heating, cooling and ventilating equipment, and equipped with the following sturdy furniture:
 1. One standard size desk, 3-foot x 5-foot, each with rolling padded desk chair, and at least three drawers.
 2. Two Drafting Tables – 39 inches x 72 inches x 36 inches high with one equipment drawer.
 3. One drafting table stool.
 4. Two 3-foot x 6-foot folding table.
 5. One plan rack to hold a minimum of six sets of project drawings.
 6. Three standard four-drawer legal-size metal filing cabinets with locks and keys.
 7. Ten folding chairs.
 8. One 8-foot x 30-inch folding leg table.
 9. One fire extinguisher.
 10. Two wastebaskets.
 11. One coat rack.
 12. Two tackboards, 36 inches x 30 inches.
 13. One heavy-duty, metal three-hole punch.
 14. One 10-inch outdoor type thermometer.
 15. One rain gauge.

16. One water cooler (provide refills as required throughout Project).
 17. One refrigerator, minimum of 4.0 cubic feet, with freezer minimum of 1.0 cubic feet.
 18. One microwave oven, 0.8 cubic feet, 800 watt minimum.
 19. Heavy-duty wall shelving 20 sq. ft. minimum.
 20. One digital camera with 2.0 megapixels or greater.
- B. Engineer's field office shall be ready for occupancy within 10 days following Notice to Proceed. Mobile field office trailer is acceptable if it contains the required facilities. At a minimum, provide the following:
1. Minimum Field Office Size - 720 square feet.
 2. Equip windows and doors with locking devices to prevent unauthorized entry. Provide three sets of keys to Owner.
 3. Provide horizontal mini-blinds for all windows.
 4. Hot and cold water connected to the facilities potable water system.
 5. Bathroom with elongated toilet and sink with hot and cold water.
 6. Telecommunications services identified in this section.
- C. Install 24-inch x 30-inch sign on outside wall as determined by Engineer. Paint sign white with blue, 3-inch high lettering, neatly arranged, to read: "Field Office, Engineer."
- D. Arrange for offices to be cleaned at least once every week. Restroom supplies shall be provided for the duration of the contract.
- E. Locate the office a minimum distance of 30 feet from existing and new structures as indicated on the Drawings. Engineer's office to be erected at location approved by Engineer, and shall not be disturbed, moved or interrupted without the Engineer's approval.
- F. On completion of the Contract, remove the field office from the Site.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01550

MAINTENANCE AND PROTECTION OF TRAFFIC

PART 1 GENERAL

1.1. DESCRIPTION

- A. Work Specified - The work specified shall include all labor, material, equipment, services and incidentals necessary to maintain and protect vehicular and pedestrian traffic through all construction areas.
- B. Related Work Specified Elsewhere
 - 1. Division 2 and 3 Technical Specifications
 - 2. Section 02661 - WATER DISTRIBUTION PIPING

1.2. QUALITY ASSURANCE

- A. Reference Standards - New York State Department of Transportation Standard Specifications, latest revision.

PART 2 PRODUCTS

- A. Post-Mounted and Wall-Mounted Traffic Control and Informational Signs - In accordance with the Federal Manual of Uniform Traffic Control Devices with NYS Supplement, current version.
- B. Traffic Control Signals - As approved by local jurisdictions.
- C. Traffic Cones and Drums, Flares, and Lights - As approved by local jurisdictions.
- D. Flagman Equipment - As approved by local jurisdictions.

PART 3 EXECUTION

3.1. GENERAL

- A. This work shall consist of maintaining traffic and protecting the public from damage to person and property within the limits of and for the duration of the Contract.
- B. All existing site roads, streets, sidewalks, and traffic ways shall be kept open for the passage of traffic and pedestrians during the construction period unless otherwise approved by the Owner, Engineer or authority having jurisdiction over same.
- C. When required to cross, obstruct or temporarily close an existing site road, street, sidewalk or trafficway, Contractor shall provide and maintain suitable detours or other approved temporary expedient for the accommodation of traffic both vehicular and pedestrian. Closings shall be for the shortest time practical, and passage shall be restored immediately after completion of backfill and temporary paving or bridging.

- D. Contractor shall give 48 hours' advance notice to the fire and police departments of his proposed operations including temporary shutdowns.
- E. Contractor shall provide signs, signals, barricades, flares, lights and all other equipment, service and personnel required to regulate and protect all traffic, and warn of hazards. All such work shall conform to requirements of the Owner or authority having jurisdiction. Remove temporary equipment and facilities when no longer required, restore grounds to original, or to specified conditions.
- F. Traffic shall be maintained over a reasonably smooth traveled way which shall be so marked by signs, delineators, guiding devices and other methods, that a person who has no knowledge of conditions may safely, and with a minimum of discomfort and inconvenience, ride, drive or walk, day or night, over all or any portion of the street under construction where traffic is to be maintained. All work shall conform to the requirements of the current Federal Manual of Uniform Traffic Control Devices with NYS Supplement.
- G. Contractor shall control dust and keep the traveled way free from materials spilled or tracked from hauling equipment.
- H. Contractor shall provide the necessary traffic control equipment and flagmen for adequate traffic control on the traveled way. Flaggers shall be used where opposing traffic is restricted to one lane or where other conditions require, or as required by permit conditions.
- I. Contractor shall provide ingress and egress to and from intersecting streets, homes, businesses and commercial establishments.
- J. Contractor shall provide adequate protection for pedestrian traffic during all phases of construction.
- K. Contractor shall maintain existing bus stops, if any, so passengers are reasonably accommodated.
- L. Contractor shall make the necessary repairs to existing pavement as required to provide a reasonable smooth traveled way where vehicle operation is maintained.
- M. The Contractor's responsibility to the public is to protect the public from damage to person and property, which may result directly or indirectly from any construction operation.
- N. The Contractor shall provide temporary markings in accordance with provisions of the Federal Manual of Uniform Traffic Control Devices with NYS Supplement, current version, as required by the agency having jurisdiction, as shown in the plans and specifications and/or as ordered by the Engineer
- O. The Contractor shall schedule work to keep to a minimum and consistent with the physical requirements of the contract, the amount of existing pavement and/or facilities that are destroyed or substantially torn up at any one time.
- P. The Contractor shall at all times conduct his operations in a manner to insure the convenience of the motorist, the pedestrians and the abutting property owners and their safety as well as the safety of his own employees.
- Q. The Contractor shall furnish, install, move, remove and maintain all signs and barricades and lighting for construction barricades as shown on the plans or as ordered by the Engineer, and in accordance with the Federal Manual of Uniform Traffic Control Devices with NYS Supplement, current version.

- R. The Contractor shall provide and maintain delineation and guiding devices which shall include: delineators, barrels, flashers, railing, temporary curb of any kind, pavement markings, and other similar materials or methods acceptable to the Engineer
- S. The Contractor shall construct, move or remove, as directed, temporary structures, approaches, detours, pavements and necessary appurtenances.
- T. The Contractor will be responsible to prepare a work zone traffic control plan and submit the plan to the Engineer for information and the Highway Department and/or NYSDOT (as required) for approval. The maintenance and protection of traffic plan shall be prepared by an engineer licensed to practice in the State of New York.

3.2. PARKING CONTROL

- A. Control all Contractor-related vehicular parking within the limits of the designed parking area to preclude interference with public traffic or parking, access by emergency vehicles, Owner's operations, or construction operations. Provide temporary parking facilities as may be required because of construction or operations.
- B. Monitor parking of all construction and private vehicles:
 - 1. Maintain free vehicular access to and through parking areas.
 - 2. Prohibit parking on or adjacent to access roads, or in non-designated areas.
 - 3. Parking will not be allowed in areas which limit sight distance of passing motorists.
 - 4. Contractor is responsible for his vehicles while on-site.

3.3. HAUL ROUTES

- A. Consult with governing authorities and establish thoroughfares which will be used as haul routes and site access.
- B. Provide traffic control of haul routes to expedite traffic flow and to minimize interference with normal traffic.
- C. Provide vehicle cleaning.

3.4. ADDITIONAL REQUIREMENTS

- A. The Contractor shall maintain the traveled way reasonably smooth and hard at all times, and shall be well drained and free of potholes, bumps, irregularities and depressions that hold or retain water. Construction operations shall be conducted to insure a minimum of delay to traffic. Stopping traffic for more than 5 minutes shall not be permitted unless specifically authorized, in writing, by the Engineer. The necessary equipment and personnel to attain and maintain a satisfactory riding surface shall be available and used as needed at all times when work is under way and when work is temporarily suspended for any period of time. Special attention to maintenance of a satisfactory traveled way shall be given during weekends, holidays and the winter season.
- B. The Contractor shall provide a sufficient number of competent flagmen in areas where traffic exists, particularly where construction equipment is operating. Each flagger shall use an orange safety vest. The vest shall be worn outside all other clothing worn by the flagger.
- C. Traffic shall be maintained in accordance with the details shown in conformance with the Federal Manual of Uniform Traffic Control Devices with NYS Supplement, current version.

D. Fencing

1. The Contractor shall completely enclose by temporary fences and meet all NYSDOT plating guidelines for all open excavations and all other potentially hazardous locations, at the end of each working day. Fencing shall be not less than 4 feet in height, mounted in steel angles or other satisfactory means of support rigidly driven into the ground and spaced at intervals not to exceed 8 feet. A minimum of one flasher per 15 feet of fencing will be required. In areas where an excavation is to remain open in excess of 14 calendar days, rigid fencing will be required having supports at intervals not to exceed 4 feet. Snow fence, cyclone fence, or wire fabric with rectangular mesh are considered minimally acceptable fencing materials.
2. The Engineer in charge may limit, extend, include or exclude areas to be fenced as conditions warrant.

E. Where sidewalk has been removed by the Contractor, he will be responsible for establishing a temporary stabilized walk for pedestrian traffic within 24 hours after removal of the sidewalk. This sidewalk may be located in the location of the original sidewalk or adjacent to the original sidewalk, providing there is an adequate right-of-way and the new location is safe for pedestrian traffic. The minimum width of the walkway is 4 feet. No additional payment will be made for installing and/or maintaining this walkway by the Contractor.

F. All existing highway signs and supports within the contract limits are to remain and are to be maintained for the duration of the contract by the Contractor.

G. On postal routes, mailboxes serviced from motor vehicles shall be maintained by the Contractor in a usable location during construction. The Contractor should not move any mailbox which contains mail. He will advise the property owner to remove such mail before he moves the box. Before acceptance of the work, any mailbox which has been disturbed or removed shall be replaced in size, kind and type by the Contractor in a location acceptable to the property owner and the Engineer.

H. Contractor must provide access to all school buses and emergency vehicles including ambulances, police cars, fire engines, etc., traveling through or stopping at any part of the construction site. At his expense, Contractor will yield to these vehicles and cease construction activities, as necessary.

END OF SECTION

SECTION 01564
EROSION CONTROL

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Installation of sedimentation and erosion control barriers.
- B. Anchoring all topsoil stockpiles with straw mulch and ringing with straw bales.
- C. Protection of catch basins with Fiber Logs, straw bales or silt fence rings.
- D. Inspection of all erosion measures after each rainfall and at least daily during prolonged rainfall.
- E. Repairing immediately any failed sedimentation and erosion control barrier.
- F. Removing and disposing sediment deposits in a manner that does not result in additional erosion or pollution.
- G. Removal of temporary controls including straw bales and silt fences after completion of construction and permanent stabilization of erosion.
- H. Removal of sedimentation barriers after completion of construction.

1.2. PERFORMANCE REQUIREMENTS

- A. Observe government policy established by United States Environmental Protection Agency (USEPA) Memorandum 78-1.
- B. Observe requirements set forth by the Federal Highway Administration Task Force 25.
- C. Conform all erosion and sedimentation control measures of "New York Guidelines for Urban Erosion and Sediment Control" published by USDA Soil Conservation Service.
- D. Temporary erosion and sediment control measures shall be installed as the first step in construction and shall not be removed until permanent cover is completely established and stabilized.

1.3. PLAN

- A. The Contractor shall implement his program of operations to effectively control erosion and sediment runoff in accordance with the approved Erosion and Sediment (E&S) Control Plan.
 - 1. Requests for variations from the approved E&S Control Plan will be submitted in writing to the project engineer prior to undertaking any actions not compliant with the Erosion and Sediment Control Plan.
 - 2. Contractor shall maintain one copy of the E&S Control Plan and erosion control-related records at the project site at all times, which shall be made available for examination

by authorized representatives of the regulatory agencies having jurisdiction over the project.

3. The erosion control records shall be arranged so as to include:
 - a. Chronological completion dates for each temporary (and permanent, if required) measure for controlling erosion and sediment.
 - b. Location, type and purpose for each temporary measure to be undertaken.
 - c. Dates when those temporary measures will be removed.
4. The plan shall be submitted within 10 days after the Notice to Proceed.

PART 2 MATERIAL AND PRODUCTS

2.1. MATERIALS

- A. Straw Bales - Shall be securely tied and measure 14 inches by 18 inches by 30 inches long or greater.
- B. Silt Fence
 1. Propex - Silt stop, Mirafi 100X or equal meeting the physical and mechanical requirements of FHA Task Force 25 specification guide for temporary silt fence.
 2. Silt fence shall be constructed using fence posts and wire fence or prefabricated units in accordance with New York guidelines for urban erosion and sediment control.
- C. Stakes and Fasteners
 1. Shall be two #3 rebar or two 2-inch by 2-inch minimum hardwood stakes for each straw bale.
 2. Shall be a minimum of 2-inch by 2-inch by 48-inch hardwood post for silt fences.
- D. Erosion Control Fabric - North American Green Type S75 or equal shall be used.

2.2. PRODUCTS

- A. Mulch and Seeding - Mulch and seeding shall be in accordance with requirements of Tables 1 through 4 of this section.

2.3. MISCELLANEOUS BEST MANAGEMENT PRACTICES

- A. Catch basin inlet protection.
- B. Stone
- C. Geotextiles.
- D. Sump pit.
- E. See Contract Drawings for specifications.

PART 3 EXECUTION

3.1. GENERAL REQUIREMENTS

- A. General drawings do not show all of the necessary control measures to prevent erosion and sedimentation.
 - 1. The Drawings only show several techniques such as straw bale and silt fence details. There are a number of control techniques discussed in this Section.
 - 2. It is the Contractor's responsibility to design, implement and maintain erosion and sedimentation control measures which effectively prevent accelerated erosion and sedimentation.
- B. Earthmoving activities shall be conducted in such a manner as to prevent accelerated erosion and sedimentation.
- C. All erosion and sedimentation control measures shall be inspected by the Contractor daily and immediately after periods of rainfall.
 - 1. Repair and/or maintenance of sedimentation and erosion control measures will be made as soon as needed.
 - 2. The Contractor will be held responsible for the implementation and maintenance of all control measures on this site.
- D. Land disturbance shall be kept to a minimum.
 - 1. Restabilization will be scheduled immediately after any disturbance.
- E. Silt fences or straw bales will be installed along the toe of all critical cut and fill slopes.
- F. Catch basins shall be protected with fiber logs, silt fences or straw bales throughout the construction sequence and until all disturbed areas are stabilized.
- G. Erosion and sedimentation control measures shall be installed prior to all construction activities.
- H. Sediment removal from control structures shall be the responsibility of the Contractor.
 - 1. Sediment shall be disposed of in a manner which is consistent with overall intent of plan and which does not result in additional erosion.
- I. The erosion and sedimentation control measures described herein are intended as a general guide for the Contractor.
 - 1. It is the Contractor's responsibility to provide any and all work necessary to prevent erosion of soil from the construction site and to provide fiber logs, silt fences, straw bales or other control measures as the need arises during construction at no additional cost to the Owner.
- J. Remove all sedimentation and erosion control barriers after completion of construction and permanent stabilization of erosion.

3.2. DIVERSION TERRACES – NOT USED.

3.3. TRENCH BARRIERS

- A. Trench barriers shall be used where the disturbed area is sloped in the direction of the pipeline, when the slope exceeds 15 percent.
- B. Trench barriers shall be earth-filled sacks or piled stone, stacked to the top of the trench after installation of the sewer and prior to backfill, if backfill is delayed.
- C. Trench barriers shall act as an erosion check by preventing the washout of the trench.
- D. Recommended Dimensions and Materials
 - Height - To top of trench
 - Spacing - Approximately every 150 feet
 - Material - Earth-filled sacks or piled stones

3.4. SEDIMENT BARRIERS

- A. Sediment barriers shall be used at storm drain inlets; across minor swales and ditches; and at other applications where the structure is of a temporary nature and structural strength is not required.
 - 1. Sediment barriers are temporary berms or other barriers that are constructed to retain sediment on-site by retarding and filtering storm runoff.
- B. Recommended Materials and Dimensions
 - 1. Straw Bales
 - a. Bales should be bound with twine.
 - b. Bales should be anchored to the ground with fence posts, wood pickets, or #3 rebar. Two anchors per bale are required.
 - c. Bales shall be installed so that runoff cannot escape freely under the bales.
 - d. Height - 1.5 feet
Width - 1.5 to 3.0 feet
Cross-Sectional Area Required Per Tributary Acre - 50 square feet

2. Stone

- a. Height - 1.5 to 2.0 feet (uniform top elevation) top

Width - 3 to 5 feet

Side Slopes - 3:1 or flatter

Cross-Sectional Area Required Per Tributary Acre - 20 square feet

Material - Coarse rock or stone

3. Silt Fence

- a. Synthetic fabric 48 inches wide for fencing material.

- b. Hardwood stakes shall be minimum 2-inch diameter or be spaced at 8 to 10 feet apart for posts.

- c. Height - ± 30 inches above ground.

4. Fiber Logs

3.5. MULCH

- A. Used alone or in conjunction with other structural or vegetative erosion control measure, mulch is applied on any disturbed area which is subject to erosion, for protection of disturbed soil or newly reseeded areas. Mulch shall not contain seeds.

3.6. EROSION CONTROL FABRIC

- A. Erosion control fabric shall be used on slopes greater than 10 percent. Prior to installation of the erosion control fabric, the underlying layer is to be graded as shown on the Drawings.

3.7. VEGETATION

A. Temporary Vegetation

1. The planting of temporary vegetative cover shall be performed on disturbed areas where the earthmoving activities will be ceased for a period of more than 30 days.

- a. The vegetation shall provide short-term rapid cover for the control of surface runoff and erosion, until permanent vegetation can be established or earthmoving activities can resume.

2. Table 2 gives recommended types of temporary vegetation, corresponding rates of applications, and planting seasons.

- a. In situations where other cover is desired, the recommendations of the local and County Conservation Districts shall be followed.

B. Permanent Vegetation

1. Planting of various permanent vegetative covers shall be performed on disturbed areas where the earthmoving activities have ceased. The vegetation shall reestablish ground cover for the control of surface runoff and erosion.

2. The seed bed for permanent vegetative cover shall be prepared by using lime and fertilizer.
 - a. If the time of the seeding occurs during a dry period, mulch shall be applied to conserve soil moisture.
3. Tables 3 and 4 give recommended procedures for establishing various types of permanent vegetation.
 - a. The tables are differentiated by the drainage of the disturbed area.
 - b. In situations where other cover is desired, the recommendations of the County Conservation Districts shall be followed.

TABLE 1

MULCH MATERIALS, RATES AND USES

MULCH MATERIAL	QUALITY STANDARDS	APPLICATION PER 1,000 SQ.FT.	RATES PER ACRE	DEPTHS OF APPLICATION
Straw	Air-dried Free from coarse	75-100 lbs. 2-3 bales	1.5-2.5 tons 90-120 bales	Lightly cover 75 to 90% of surface
Wood chips	Green or air-dried	500-900 lbs.	10-20 tons	2" - 7"

TABLE 2

TEMPORARY SEEDINGS FOR EROSION CONTROL OF CONSTRUCTION SITES

SPECIES OR MIXTURE FOR TEMPORARY COVER	PERCENT BY WEIGHT	SEEDING RATES IN LBS. PER 1,000 SQ.FT.	RECOMMENDED SEEDING DATES
Annual Rye Grass	100%	1	April 1 to June 1 and August 15 to October 15
Field Broomegrass	100%	1	March 1 to June 15 and August 15 to September 15
Sundangrass	100%	1	May 15 to August 15

TABLE 3

PERMANENT SEEDINGS FOR WELL DRAINED AREAS

SPECIES OR MIXTURE FOR PERMANENT COVER	PERCENT BY WEIGHT	SEEDING RATES IN LBS. PER 1,000 SQ.FT.	RECOMMENDED SEEDING DATES
Ryegrass	100%	1	April 1 to October 15
Tall Fescue	100%	1 to 2	April 1 to October 15
Timothy	100%	1	April 1 to October 15
Tall Fescue or Ryegrass Crownvetch ⁽¹⁾	66% 34%	1 to 2	April 1 to July 15
Creeping Red Fescue and Crownvetch	67% 33%	1 to 2	April 1 to May 24
Flat Pea and Tall Fescue or ⁽²⁾ Ryegrass	66 (80)% 34 (20)%	1 to 2	April 1 to July 15

- (1) Inoculate legume seeds - use four times the normal rate when hydroseeding.
 (2) When seedings are mulched, seeding may be extended from October 15 to April 1 for dormant seedings and April 1 to September 15 for regular seedings.

TABLE 4

PERMANENT SEEDINGS FOR AREAS OF VARIABLE DRAINAGE

SPECIES OR MIXTURE FOR PERMANENT COVER	PERCENT BY WEIGHT	SEEDING RATES IN LBS. PER 1,000 SQ.FT.	RECOMMENDED SEEDING DATES
Tall Fescue Birdsfoot	67%	1 to 2	April 1 to June 15
Trefoil	33%		
Tall Fescue Birdsfoot ⁽²⁾ Trefoil Crownvetch ⁽¹⁾	55% 25% 20%	1 to 2	April 1 to June 15

- (1) Inoculate legume seeds - use four times the normal rate when hydroseeding.
 (2) When seedings are mulched, seeding dates may be extended from October 15 to April 1 for dormant seedings and April 1 to September 15 for regular seedings.

3.8. SPECIAL CONDITIONS

- A. Prohibited Construction Practices - Prohibited construction practices include but shall not be limited to the following:
- Dumping of spoil material into any stream corridor, any wetlands, any surface waters or at unspecified locations, even with permission of the property owner.
 - Indiscriminate, arbitrary or capricious operation of equipment in any stream corridors, any wetlands or any surface waters.
 - Pumping of silt-laden water from trenches or other excavations into any surface waters, any stream corridors, any wetlands or storm sewer.
 - Damaging vegetation adjacent to or outside of the access road or the right-of-way.

5. Disposal of trees, brush and other debris in any stream corridors, any wetlands, any surface water or at unspecified locations.
 6. Permanent or unspecified alteration of the flow line of the stream.
 7. Open burning of construction project debris.
- B. Defective Devices - Any erosion and sediment control devices which become damaged, clogged or otherwise non-functional shall be immediately replaced by the Contractor, without additional compensation.
- C. Adjustment
1. If the planned measures do not result in effective control of erosion and sediment runoff to the satisfaction of the regulatory agencies having jurisdiction over the project, the Contractor shall immediately adjust his program and/or institute additional measures so as to eliminate excessive erosion and sediment-runoff.
 2. If the Contractor fails or refuses to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor.

END OF SECTION

SECTION 01600
MATERIALS AND EQUIPMENT

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Products.
- B. Shipping and handling.
- C. Storage and protection.
- D. Substitutes.

1.2. PRODUCTS

- A. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- B. Provide interchangeable components of the same manufacturer, for components being replaced.

1.3. SHIPPING AND HANDLING

- A. Arrange deliveries in accordance with the Progress Schedule.
- B. Coordinate deliveries to avoid conflicts with Work, conditions at the Site, work of other contractors, work of Owner, and availability of personnel and handling equipment.
- C. Transport by methods to avoid damage.
- D. Deliver in manufacturer's unopened containers or packaging, dry, with identifying labels intact and legible.
- E. Provide equipment and personnel for handling to prevent soiling and damage.
- F. Protect sensitive equipment and finishes against impact, abrasion and other damage.
- G. Promptly inspect shipments to assure compliance with requirements, correct quantities, and identify damage.

1.4. STORAGE AND PROTECTION

- A. Store and protect in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive items in weather-tight, climate controlled enclosures in an environment favorable to item.
- B. For exterior storage of fabricated items, place on sloped supports, above ground.
- C. Provide bonded off-site storage and protection when storage and protection cannot be provided on Site.

- D. Cover items subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation.
- E. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- F. Provide equipment and personnel to store items by methods that prevent soiling, disfigurement, and damage.
- G. Arrange storage to permit access for inspection. Periodically inspect to assure items are undamaged and are maintained in acceptable conditions.
- H. Piping and materials shall not be stored along the route for more than 1-days' length of anticipated construction.

1.5. SUBSTITUTES

- A. Submit three copies of requests for substitution to Engineer including all items required by General Conditions Article 7.05. Each submittal shall be provided with a transmittal letter stating "REQUEST FOR SUBSTITUTION" and identifying the specific item for which the substitution is being requested.
- B. Limit each request to one proposed substitute item.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.
- E. Operation and maintenance data.
- F. Warranties and bonds.
- G. Spare parts and maintenance materials.

1.2. CLOSEOUT PROCEDURES

- A. Contract closeout procedures shall be in accordance with GC-15.06.

1.3. RECORD DOCUMENTS

- A. The following supplements the requirements of GC-7.11:
 - 1. Recording, keep, and monitor up to date record documents of work constructed in the field. Legibly mark in red ink or red pencil to show all changes in, or directly associated with, the Work of this Contract. Keep entire set or record documents current on a day to day basis. Record documents shall be kept on hand in the Contractor's field office and shall be available for periodic examination by Engineer upon request.
 - 2. Final Record Drawings - Provide the pipe sizes and horizontal and vertical location of all valve boxes, air release valves, curb boxes, meter pits, fire hydrants, blowoffs, corporations, fittings, and other appurtenances. The information will be provided digitally in the form of an ASCII file and consistent with the plan datum and control as shown on the Drawings. The ASCII file shall be in the following format: Point No., Northing, Easting, Elevation, Description. The Contractor will employ the services of a registered professional surveyor licensed in the State of New York to provide the information.
 - 3. Examples of annotations that could occur are as follows:
 - a. Change in location or elevations of underground facilities installed under this contract.
 - b. Change in materials, such as pipe materials.
 - c. Relocation of existing underground facilities.

- d. Change in elevations of finished surfaces along route of installed underground facilities.
- 4. Show measurement of pipeline location from edge of pavement of nearby structure/monument, at a minimum of 100-foot intervals.
- B. At Substantial Completion, affix Contractor's red identification stamp to front cover of each set of record documents and label them as "Record Documents." One set of record documents shall be given to Engineer no later than 14 days after the date of Substantial Completion. Engineer will either approve record documents or return them to Contractor with comments. Contractor shall resubmit record documents until Engineer has no further comments. Affix Contractor's identification stamp, together with the label "Record Documents," as follows:
 - 1. On each Drawing, just above the Engineer's title block.
 - 2. On each Shop Drawing, just above the preparer's title block.
 - 3. On the front cover or front page of all other documents.
- C. Final payment to Contractor will not be considered until acceptable record documents have been turned over to Owner."

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 02030

DEMOLITION

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Demolition and removal of site-related construction.
- B. Demolition and removal of piping.

1.2. RELATED SECTIONS

- A. Section 01010 - SUMMARY OF WORK: Work sequence and Owner's continued occupancy.
- B. Section 01039 - COORDINATION AND MEETINGS
- C. Section 01300 - SUBMITTALS
- D. Section 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS: Temporary enclosures, dust control, barricades, security at Owner-occupied areas, and cleanup during demolition operations.
- E. Section 01700 - CONTRACT CLOSEOUT: Project record documents.
- F. Section 02225 - TRENCHING: Fill material.

1.3. SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings
 - 1. Submit proposed demolition plan together with any necessary diagrams and/or drawings, taking into account Owner's continuing occupancy and sequence of construction of the project.
 - 2. Demolition plan shall include the following:
 - a. Demolition, removal, and disposition of items identified in this section.
 - b. Disposal locations of removed items.
 - c. Relocation of salvageable items.
 - d. Time lines and sequences of operations.
 - e. Location of temporary barricades, fences, and signs.

1.4. PROJECT RECORD DRAWINGS

- A. Submit under provisions of Section 01700.

- B. Accurately record actual locations of capped utilities and subsurface obstructions.

1.5. REGULATORY REQUIREMENTS

- A. Conform to applicable codes for demolition of structures, protection of adjacent structures, dust control, runoff control, and disposal of materials.
- B. Obtain required permits from authorities.
- C. Notify affected utility companies before starting demolition operations and comply with their requirements.
- D. Do not close or obstruct roadways, sidewalks, hydrants, and parking areas without required permits.
- E. Conform to applicable regulatory procedures if a hazardous environmental condition is encountered at site or if hazardous material disposal is required.

1.6. HAZARDOUS ENVIRONMENTAL CONDITIONS

- A. If an unknown unforeseeable hazardous environmental condition is encountered at the site, or if Contractor or anyone for whom Contractor is responsible creates a hazardous environmental condition, immediately:
 - 1. Secure or otherwise isolate such condition;
 - 2. Stop all Work in connection with such condition and in any area affected thereby; and
 - 3. Notify Owner and Engineer and NYSDOT (and promptly thereafter confirm such notice in writing).
- B. Resume Work in connection with such condition or in any affected area only after Owner has obtained any required permits related thereto and delivered to Contractor a written notice specifying under what special conditions Work may be resumed safely.

1.7. SEQUENCING

- A. Sequence demolition work to conform to provisions of Section 01010.

PART 2 PRODUCTS

2.1. FILL MATERIALS

- A. Fill Material - As specified in Section 02225.

PART 3 EXECUTION

3.1. PREPARATION

- A. Thirty days prior to performing any demolition, there shall be a coordination meeting between the Contractor, Owner, and Engineer to discuss the Contractor's Demolition Plan and related procedures. Items to be discussed shall be, but not limited to, dust control, sequence of work, removal of material, protection of existing equipment, access and egress of material, etc.

Demolition procedures must be coordinated with the Owner's operating personnel and operations, and adjusted accordingly, if necessary.

Following the coordination meeting, begin demolition operations after obtaining written authorization to proceed from the Owner.

- B. Notify Owner and Engineer and NYSDOT at least 48 hours in advance of intended start of demolition operations in each affected area.
- C. Provide, erect, and maintain temporary barriers, signs, and security devices where required.
- D. Erect and maintain temporary partitions and weatherproof closures to prevent spread of dust, odors, and noise in areas of continued Owner occupancy identified in Section 01010.
- E. Protect existing structures, equipment, appurtenances, architectural features, and materials which are not to be demolished. Prevent movement or settlement of adjacent structures.
- F. Protect existing site-related items such as pavements, walkways, parking areas, curbs, aprons, and landscaping features which are not to be demolished.
- G. Protect existing electrical; heating, ventilating, and air conditioning; and plumbing systems, including related components, which are not to be demolished.
- H. Mark location of underground utilities.

3.2. DEMOLITION REQUIREMENTS

- A. Confine demolition operations to designated areas of the site.
- B. Conduct operations to minimize interference with adjacent and occupied building areas. Maintain protected egress and access at all times.
- C. Cease operations immediately if adjacent structures appear to be in danger. Notify Engineer. Do not resume operations until directed.
- D. All materials, except rubble and non-metallic scrap, shall become the property of the Owner and be disposed of in accordance with regulations.
- E. Dispose of rubble and non-metallic scrap at an off-site area in accordance with local laws.
- F. Dispose of designated hazardous materials in accordance with the nature of the material, required handling and disposal procedures, regulatory requirements, and applicable permits.

3.3. DEMOLITION

- A. Break up and remove slabs-on-grade, pavements, curbs, aprons, etc., and related items in designated areas.
- B. Empty and remove buried tanks, meter pits, and associated piping.
- C. Backfill, compact, and rough grade areas excavated, including cavities created by removal of demolished items, in accordance with Section 02225 using fill material specified in Part 2.
- D. Disconnect cap, and identify utilities within demolition areas.

- E. Remove designated buried sewer and storm drain piping systems, capping with concrete plugs those segments to be abandoned, and provide temporary capping of those segments to be reused.
- F. Carefully disconnect support, protect, and remove hydrants and designated valves to be salvaged for Owner's future use.
- G. All removed materials and equipment designated for reuse on the Project, or salvaged for Owner's future use, shall be stored at Contractors facility and protected from damage and from deterioration by weather until placed for reuse or turned over to Owner.
- H. Remove and dispose of demolished materials as work progresses. Do not burn materials; do not bury materials.
- I. Patch and refinish existing visible surfaces which are to remain and otherwise restore adjacent surfaces.
- J. Remove temporary barricades, partitions, signs, etc.
- K. Upon completion of demolition operations, leave areas in a clean condition.

3.4. SCHEDULES

- A. Site-Related Construction
 - 1. Pavements, walks, steps, curbs, aprons, and other slab-on-grade.
 - 2. Underground tanks, vaults, meter pits.
 - 3. Underground water piping, valves, and valve boxes.
 - 4. Fencing, gates, signs, posts, barriers, etc.
 - 5. Filling below-grade cavities and excavations (created by removed items) with approved material(s).
- B. Piping
 - 1. Equipment, supports, anchors, concrete pads, and associated items.
 - 2. Piping, fittings, valves, hangers, concrete supports and associated items.
 - 3. Meters, gages, recording instruments, and other measuring devices.
 - 4. Disconnecting and capping of identified utilities.
 - 5. Domestic water supply piping, fittings, valves, and supports.
 - 6. Plumbing specialties, such as hydrants, backflow preventers, and water hammer arrestors.

END OF SECTION

SECTION 02112
PAVEMENT CUTTING

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Pavement cutting.
- B. Pavement scoring.
- C. Pavement (concrete) breaking.
- D. Pavement grinding.
- E. Pavement removal and disposal.

1.2. REFERENCES

- A. NYSDOT - Manual of Uniform Traffic Control Devices.

1.3. RELATED SECTIONS

- A. Section 01025 – GENERAL CONTRACT BID PRICE ITEMS
- B. Section 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS
- C. Section 01550 - MAINTENANCE AND PROTECTION OF TRAFFIC
- D. Section 02225 - TRENCHING
- E. Section 02510 - HOT MIX ASPHALT PAVING

1.4. REGULATORY REQUIREMENTS

- A. Coordinate pavement cutting with utility companies.
- B. Conform to applicable local and state codes for legal disposal of pavement materials.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1. PREPARATION

- A. Notify local officials, Fire and Police Departments of streets to be blocked off, detours or restrictions to maintaining of traffic on a daily basis.
- B. Set up barricades, warning signs and traffic direction information prior to start of pavement cutting.
- C. Provide flagmen to direct traffic.

3.2. PAVEMENT CUTTING AND BREAKING

- A. Pavements covering those areas to be excavated shall be broken up, removed, and then disposed of in accordance with Article 1.4 above. All paved areas shall be first cut or scored continuously along a straight line, parallel to and on each side of the centerline of the trench or excavation, at a width sufficient for the trench excavation or structure excavation.
- B. Pavement cuts in concrete pavement or pavement with a concrete base shall be made by scoring or cutting the concrete with a concrete saw. The depth of the saw cut shall be to the full depth of the concrete pavement thickness. Before excavation, the concrete pavement shall then be broken up with hand operated, pneumatic paving breakers, or mechanical drop hammers designed for such purpose, providing they may be used without endangering existing utilities or causing undesirable vibrations. "Headache balls" will not be permitted for breaking up concrete pavement.
- C. Pavements cuts in blacktop pavement shall be made by scoring or cutting the pavement with a concrete saw, wheel cutter, pneumatic paving breaker or drop hammer type pavement cutter. The pavement cut must be continuous, and made for the full depth of the pavement.
- D. Pavement cuts in driveways shall be made in a straight alignment perpendicular or parallel to the driveway and for its full width.
- E. Pavement cuts in parking areas shall be made in a straight alignment parallel to the centerline of trench.

3.3. PAVEMENT GRINDING

- A. Where shown on the Contract Drawings, the Contractor shall remove a portion of an existing pavement including Portland cement concrete pavement, asphalt Portland cement concrete pavement base course, to the limits and profile specified by grinding, milling, or planing methods. This process shall yield a base upon which a final pavement course will be applied. The Contractor shall employ equipment especially designed and manufactured for the grinding, milling or planing of pavements.
- B. The resulting ground, milled or planed surface shall be thoroughly cleaned and free from dust, loose pavement material or other material. The surface shall be free from gouges, large cracks and unsound, soft or broken-up areas. Gouges from lack of proper control of the grinding, milling or planing machine shall be made level and true by the use of a trueing and leveling course of asphalt concrete if allowed by the Engineer. Cracks greater than 1/4-inch shall be cleaned and filled in accordance with NYSDOT Specification 633.302 referenced above. Unsound, soft or broken-up areas shall be excavated and repaired.

- C. Contractor shall dispose of all asphalt concrete removed by grinding.

END OF SECTION

SECTION 02141

REMOVAL OF WATER

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Providing equipment, materials and labor required to successfully complete the work included in this section.
- B. Maintaining and operating pumps and related equipment, including standby equipment, of sufficient capacity to adequately perform dewatering as required by this section.
- C. Lowering the groundwater table elevation.
- D. Intercepting seepage from excavation slopes.
- E. Controlling groundwater flow that may adversely affect excavation or construction activities.
- F. Collecting, removing and disposing of all excess groundwater.
- G. Collecting, removing, and disposing of all wastewater.
- H. Removing and/or disposing of spoil, excess materials, equipment, trash and debris used for or resulting from the work included in this Section.

1.2. RELATED SECTIONS

- A. Refer to report on subsurface investigation.
- B. Section 01025 - GENERAL CONTRACT BID ITEMS
- C. Section 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS
- D. Section 01564 - EROSION CONTROL
- E. Section 02225 - TRENCHING

1.3. REGULATORY REQUIREMENTS

- A. Conform to applicable local and state codes for legal disposal of water.
- B. Temporary water supplies shall meet requirements of local, state and federal regulatory agencies.
- C. Conform to applicable OSHA standards.

1.4. WELLPOINT DEWATERING SYSTEM

- A. If well point dewatering methods are proposed by Contractor, he shall prepare a plan of dewatering system and discuss plan with Owner and Engineer. Review or comments by Owner and Engineer concerning the proposed plan shall not relieve Contractor of his responsibilities for dewatering his excavations in conformance with this section of the specifications.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1. PREPARATION

- A. Review the subsurface investigation report and become familiar with the groundwater conditions at the site. Allocate sufficient time and use appropriate procedures based on these conditions for dewatering excavations.
- B. If necessary, arrange for water sampling and analysis of each water supply source which may be affected by dewatering operations and submit a copy of the results to the Engineer.
- C. Examine adjacent structures and utilities, both existing and under construction, for possible settlement, movement or other adverse effects resulting from dewatering methods or water removal. Take necessary precautionary steps to protect such structures and utilities.
- D. Should the drawdown of groundwater levels by removal or dewatering systems critically reduce or disrupt public or private water supplies, the Contractor shall be prepared to:
 - 1. Provide adequate potable water to the Owners or users of the affected water supplies until groundwater levels have recovered, so as to sufficiently restore those deficient water supplies.
 - 2. Provide to the Engineer documentation to confirm that temporary water supplies meet the requirements of local, state and federal regulatory agencies.

3.2. REMOVAL OF WATER

- A. Assume responsibility for site, surface and subsurface drainage. Maintain such drainage as specified herein during the life of the contract.
- B. Supply all supervision, labor, material, equipment, including standby equipment, necessary to maintain a dry excavation as may be necessary to construct the project.
- C. Maintain groundwater in or below the bearing strata at a safe level at all times by methods which prevent loss of fines, which preserves the undisturbed state of subgrade soils and which sufficiently lowers the groundwater level in permeable strata at or below excavation and fill levels such that blowing or unstable conditions do not develop in the bottom or sides of excavation or fill areas.
- D. Protect all adjacent structures, existing and under construction, from settlement, flotation, damage or other adverse effects resulting from water removal or dewatering methods.

- E. Install all drains, ditching, sluiceways, pumping and bailing equipment, wicking, sumps, wells, well points, cutoff trenches, curtains, sheeting and all other equipment and structures necessary to create and maintain a dry excavation and a groundwater level at a minimum of 2 feet below excavation subgrades.
 - 1. As part of any dewatering system, observation wells or piezometers shall be provided and installed, as required, to effectively and efficiently monitor drawdown to required levels.
- F. Discharge water removed from the site to natural watercourses, storm drains, or channels.
 - 1. Large quantities of water shall not be discharged as overland flow. Overland flow is not permitted onto private property.
 - 2. Discharge water shall be removed in accordance with NYSDEC guidelines.
 - 3. Wastewater shall be disposed of in a manner satisfactory to the local Public Health Officer.
 - 4. Notify NYSDOT, NYS DEC, or appropriate regulatory agency prior to discharging water to storm drain.
- G. Dewatering operations shall cease when all foundations, structures, pipe installations and other excavated areas have been properly backfilled and compacted, and are safe from damage, flotation, settlement and displacement.

3.3. MAINTENANCE

- A. Operate and maintain dewatering and removal operations on a 24-hour basis for the time required to complete that portion of the Work which requires dewatering prior to its construction and which requires protection from flotation or displacement of such Work until proper backfilling and compaction is completed.

3.4. REMOVAL

- A. After groundwater levels have returned to elevations appropriate for conditions and time of year, without causing damage to the work, remove all dewatering equipment and related equipment from the site and restore site to original conditions or rehabilitate site to meet requirements of Contract Documents.

END OF SECTION

SECTION 02161
SHEETING AND BRACING

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Sheeting and bracing installation, removal, and left in place.
- B. Design requirements.
- C. Regulatory codes and requirements.
- D. Special Conditions.
- E. Materials.

1.2. RELATED SECTIONS

- A. Section 01025 – GENERAL CONTRACT BID ITEMS
- B. Section 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS
- C. Section 02141 - REMOVAL OF WATER
- D. Section 02225 - TRENCHING
- E. Section 02226 - ROCK REMOVAL
- F. Section 02228 - COMPACTION

1.3. REGULATORY REQUIREMENTS

- A. All sheeting and bracing including the use of mobile shields shall conform to Public Law 91-596 (Williams Steiger Act); the Occupational Safety and Health Administration Act (OSHA) of 1970 and its amendments and regulations; or to the New York State Industrial Code Rule 23, entitled "Protection in Construction, Demolition and Excavation Operations" as issued by New York State Department of Labor, Board of Standards and Appeals; whichever is the most stringent.
- B. Conform to New York State Industrial Code Rule 53, entitled "Construction, Excavation and Demolition Operations at or Near Underground Facilities" as issued by the State of New York Department of Labor, Board of Standards and Appeals.

1.4. REFERENCES

- A. ASTM A6/A6M - General Requirements.
- B. ASTM A328 - Steel Sheet Piles.

- C. NFPA - National Forest Products Association.

PART 2 PRODUCTS

2.1. MATERIALS

- A. Wood - Tongue and groove, #3 Common Douglas Fir or Hemlock or Utility grade Southern Pine; NFPA grading or equal, meeting the requirements of the NFPA.
- B. Steel - ASTM A36 as required by ASTM A328.
- C. Trench Boxes - Fabricated steel or aluminum.

PART 3 EXECUTION

3.1. PROTECTION

- A. When so designated on the drawings or stated in the specifications or to comply with local, state, or federal (OSHA) regulations, or when sloped excavations are not feasible, not possible or allowed or if excavations endanger adjacent facilities, sheeting and bracing shall be installed by the Contractor.

3.2. DESIGN REQUIREMENTS

- A. All sheeting and bracing shall be designed and monitored by a professional engineer licensed in New York State.
- B. Design shall include all loading conditions to which the sheeting and bracing will be subjected during construction.
- C. Design sheeting and bracing systems against failure from the maximum loads that will occur during construction, including surcharge loads and additional loading due to construction equipment.
- D. Design sheeting and bracing systems to enable safe construction of structures, utilities and appurtenances, and prevent excessive ground loss, displacement of adjacent foundations, and displacement of the bottom of the excavation.

3.3. INSTALLATION

- A. Provide all materials, equipment and labor necessary to construct and maintain all required excavation support systems.
- B. Sheeting and bracing support systems shall include, but shall not be limited to, wall support such as wood sheeting, ring wales, lagging, soldier piles, steel sheeting, trench boxes and bracing members such as stringers, wales, struts, rakers, shores, tieback anchors, etc. necessary to prevent damage to the work and for the safety of workers, the general public or adjacent property.
- C. No excavation shall be performed below a line drawn down and away at a slope of two horizontal and one vertical from the nearest footing or grade beam of the existing building or as shown on the Drawings without providing sheeting, shoring and bracing to provide lateral

support for soils beneath the foundations of the building and to prevent damage to the building.

- D. Design of bracing shall be such as to permit proper construction of the walls and footings and proper installation of the utilities as shown on the Drawings.
- E. Sheet piling shall not be driven while concrete is being placed, or within 24 hours after placement, nor during pile load testing.
- F. Do not brace to concrete without written approval of the Engineer.
- G. Install sheet piling and bracing systems in a logical sequence as excavation operations are performed.
 - 1. If a prefabricated mobile shield is used, the bottom of the shield shall be maintained as high as possible (preferably above the spring line of the pipe, maximum 2 feet) to prevent disturbance of the bedding material and tension forces on pipe joints.
 - 2. Openings or troughs created by the use of a shield shall be filled and compacted in accordance with Sections 02225 and 02228.

3.4. MAINTENANCE

- A. Maintain sheet piling and bracing systems as functional on a 24-hour basis.
- B. Provide a means of determining movement of excavation walls, and adjacent soil, buildings and structures and utilities.
 - 1. If movement or damage occurs, immediately cease all construction activities, install temporary measures to prevent further movement or damage and notify the Engineer.
 - 2. Movement or damage due to failure of sheet piling and bracing systems shall be permanently repaired as soon as possible, at no cost to the Owner and at no additional cost for time.

3.5. REMOVAL

- A. Remove sheet piling and bracing as the work progresses in a manner which shall prevent damage to finished work, adjacent structures and property.
 - 1. All voids created by removal of sheet piling and bracing shall be filled and compacted in accordance to the guidelines of Sections 02225 and 02228.
- B. Sheet piling to be left in place shall be new and unused material. Where shown on drawings, specified or approved, sheet piling shall be cut off as specified, or a minimum of 2-1/2 feet below proposed final grade.
 - 1. Contractor may elect to leave sheet piling and bracing in place (cut off as described above) if he elects to do so at his own expense and with Engineer's approval.
 - 2. Provide to the Engineer a drawing of cut-off sheet piling locations. Drawing should show site plan with dimensioned locations of sheet piling, type of material remaining, and depths or elevations to top and bottom of remaining sheet.

END OF SECTION

SECTION 02205

PROTECTION OF EXISTING FACILITIES

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Location of facilities.
- B. Notification of owners and authorities.
- C. Coordination and preparation.
- D. Protection of facilities.
- E. Relocation of facilities.
- F. Protection of storm drains.
- G. Protection of water mains near sewers.
- H. Abandonment of utilities.
- I. Restoration of property markers.

1.2. RELATED SECTIONS

- A. General Conditions
- B. Section 01039 - COORDINATION AND MEETINGS
- C. Section 01300 - SUBMITTALS
- D. Section 02225 – TRENCHING
- E. Section 02161 - SHEETING AND BRACING
- F. Section 02226 - ROCK REMOVAL

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1. LOCATION OF FACILITIES

- A. Prior to construction, verify location of existing underground facilities near or adjacent to project.

1. Consult with appropriate Underground Facilities Protection Organization (Dig Safely NY) and owners of facilities and arrange for field stake-out or other markings to show locations.
 2. Perform exploratory excavation at key junctures and other critical points to aid in ascertaining locations.
- B. Report field stake-out findings and results of exploratory excavations to Engineer if possible changes in project location or design are indicated because of suspected interferences with existing facilities. Allow Engineer sufficient time to determine magnitude of changes and to formulate instructions in that regard.
- C. If location of an existing underground facility is uncertain, apply careful excavation and probing techniques during construction to locate and avoid damage to same.

3.2. NOTIFICATIONS OF OWNERS AND AUTHORITIES

- A. Prior to construction, notify owners of existing facilities, including local Police and Fire Departments, of general scope, nature and planned progress schedule of the Work.
- B. Notify owners of nearby underground facilities when excavating is to take place in a particular area, allowing them reasonable time to institute precautionary procedures or preventive measures which they deem necessary for protection of their facilities.
- C. When existing utilities, such as sewer, water, gas, telephone or electric power are damaged or disturbed during construction, immediately notify affected utility Owner and Project Owner and NYSDOT resident.
- D. Notify Police and Fire Departments, including affected owners, immediately if hazardous conditions are created or have the potential for occurring, as a result of damage to an existing facility or as a result of other activities at project site. Hazardous conditions could be created from: fire, explosion, escape of gas, escape of fuel oil, gasoline or industrial fluids, downed electrical wires, and disrupted underground electrical cables.

3.3. COORDINATION AND PREPARATION

- A. Discuss anticipated work schedule with local authorities and owners of utilities at preconstruction meeting, including procedures to be followed if one or more utilities are damaged or disrupted. Develop contingency plans to address Contractor's role in repair of damaged utilities.
- B. Make preparations beforehand to repair and restore damaged utilities, including arrangements for standby materials and equipment to be promptly assembled at site and utilized immediately.
- C. Adjust work schedules and personnel assignments as necessary to conform with requirements of utility owner whose utility is to be temporarily interrupted during construction. Cooperate with utility owner in this regard to minimize the time of interruption.
- D. Make preparations for and conform to applicable requirements of New York State Industrial Code Rule 53 (as amended April 1, 1975) entitled, "Construction, Excavation and Demolition Operations at or Near Underground Facilities," issued by State Department of Labor.

3.4. PROTECTION OF FACILITIES

- A. Plan and conduct construction operations so that operation of existing facilities near or adjacent to the Work, including electric, telephone, sewer, water, gas or drainage utilities, are sustained insofar as the requirements of the project will allow.
- B. Protect existing facilities from damage or movement through installation of adequate support systems and use of proper equipment, including application of careful excavation and backfilling techniques in sensitive areas.
- C. Existing utilities and other facilities which are damaged by the Contractor's construction operations shall be promptly repaired by Contractor to the satisfaction of the affected owner or, if he so elects, that owner will perform the repairs with his own forces. Under either arrangement, such repair work shall be done at Contractor's expense.
- D. When aboveground visible facilities such as poles, wires, cables, fences, signs or structures constitute an unavoidable interference, notify Engineer and consult with affected owner regarding temporary removal and later restoration of the interfering item. Arrange with that owner to remove and later restore the interfering item to the satisfaction of the owner, subject to approval of the project Owner; or, allow affected owner to perform such work with his own forces. Under either arrangement, such work shall be done at Contractor's expense.
- E. Take all necessary precautions to prevent fires at or adjacent to the work, buildings, and other facilities. No burning of trash or debris is permitted.
- F. During construction, if an existing water main is damaged or breaks due to construction activity, the Contractor shall be required to repair the existing main at his expense and will be required to pay for all testing requirements stipulated by the County Department of Health (DOH) prior to putting the main back in service.

3.5. RELOCATION OF FACILITIES

- A. If the location or position of an existing gas or water pipe, public or private sewer or drain, conduit or structure be such as, in the opinion of Engineer, to require its removal, realignment or change, such alteration shall be without cost to the Contractor for the work of removal, realignment or change only.
- B. Uncovering, supporting and sustaining such facility before its removal or before and after its realignment or change, shall be the Contractor's responsibility as part of the work of his Contract.
- C. Contractor shall be entitled to extension of time for completion of entire Work as the Engineer determines that the entire Work was delayed by the removal, realignment or change of such obstruction.

3.6. PROTECTION OF STORM DRAINS

- A. Where existing storm drain systems are being replaced or interrupted, provide temporary bypass pumping or piping to maintain flow around that segment of the Work such that no back-ups occur in existing systems.
- B. Maintain existing catch basins, and other utility structures in their pre-work condition. Any material or debris entering same due to the Contractor's operation shall be promptly removed.

3.7. PROTECTION OF WATER MAINS NEAR SEWERS

- A. Where a minimum 10-foot horizontal separation or minimum 18 inch vertical separation (bottom of water pipe to top of sewer pipe) cannot be maintained between a water main and sewer and/or storm line, one or more of the following remedies shall be pre-approved by the Engineer and then incorporated in the work:
 - 1. The sewer lines shall be encased in 4,000 psi mix concrete for a length of 10 feet on either side of the water main.
 - 2. Both the water main and sewer line shall be constructed of pressure type joints of ductile iron pipe, and shall be pressure tested to 100 psi to assure watertightness.
 - 3. One full length of water main shall be centered over the sewer line, so that both joints will be as far from the sewer as possible.
 - 4. Relocate water main to obtain 18 inches minimum vertical separation.

3.8. ABANDONMENT OF UTILITIES

- A. Remove existing utilities to be abandoned within limits of trench excavation, or impinging on trench limits.
- B. Open ends of abandoned utilities, or those scheduled for abandonment, shall be bulkheaded by brick masonry or 4,000 psi mix concrete; or by cast iron plugs or caps in small diameter water mains. Pipes shall be filled with flowable concrete in accordance with NYSDOT standard.
- C. Abandoned manholes and water valve casings shall be backfilled to grade with approved trench backfill material.
- D. Frames, covers, grates, water valve casing, sections of water piping, hydrants (including standpipe and boot) valves and other items to be abandoned shall be salvaged for reuse and be delivered to Owner's property yard.

3.9. RESTORATION OF PROPERTY MARKERS

- A. Property corner markers, boundary monuments, etc., disturbed or moved by the Contractor's operation shall be restored, in conformance with the property deed description, by a licensed land surveyor. Restoration of the property corner markers or boundary monuments shall be certified by said surveyor on a map prepared by him which shows the work accomplished. One copy of the map shall be given to the property owner and one copy given to the project Owner.

END OF SECTION

SECTION 02225

TRENCHING

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Excavating trenches for utilities.
- B. Pipe foundations and bedding.
- C. Backfilling and compacting.
- D. Materials.

1.2. RELATED SECTIONS

- A. Section 01019 - CONTRACT CONSIDERATIONS
- B. Section 01400 - QUALITY CONTROL
- C. Section 01500 - TEMPORARY FACILITIES
- D. Section 02112 - PAVEMENT CUTTING
- E. Section 02141 - REMOVAL OF WATER
- F. Section 02161 - SHEETING AND BRACING
- G. Section 02205 - PROTECTION OF EXISTING FACILITIES
- H. Section 02226 - ROCK REMOVAL
- I. Section 02228 - COMPACTION: Testing, backfill, compaction.
- J. Section 02661 - WATER DISTRIBUTION PIPING
- K. Section 03001 - CONCRETE

1.3. REFERENCES

- A. Standard Material Specifications for gravel, sand, crushed stone and gravel-cement mixtures published by the Department of Transportation (NYSDOT).
- B. ASTM C136 - Sieve Analysis of Fine and Course Aggregates
- C. ASTM D1556 - Density of Soil in Place by Sand-Cone Method
- D. ASTM D1557 - Laboratory Compaction of Soil Using Modified Effort

- E. ASTM D2922 - Density of Soil in Place by Nuclear Methods
- F. ASTM D3017 - Water Content of Soil in Place by Nuclear Methods
- G. OSHA - Occupational Safety and Health Administration

1.4. SUBMITTALS

A. Granular Materials

1. Granular materials required for filling, backfilling, bedding, subbase and other purposes shall be as shown on the Drawings. Prior to bidding, prospective contractors shall familiarize themselves with the available quantities of approved on-site and off-site materials.
2. For each on-site or off-site material proposed, furnish to Engineer for approval a certified gradation analysis at least 10 days prior to date of anticipated use of such material. Except as specified herein, only off-site approved materials shall be utilized.
3. The Engineer reserves the right to inspect proposed sources of off-site granular material and to order such tests of the materials as he deems necessary to ascertain its quality and gradation of particle size. The Contractor shall, at his own expense, engage an approved testing laboratory to perform such test, and submit certified test results to the Engineer. If similar tests of the material from a particular source were performed previously, submit results of these tests to the Engineer for consideration.
4. No granular materials shall be used on this project for fill, backfill, bedding, subbase, or other purpose until approval is obtained from the Engineer, and only material from approved sources shall be used.

B. Geotextile Fabric

1. Submit a 1 square foot sample of each geotextile to be used.
2. Submit manufacturer's specifications of average roll characteristics for standards ASTM geotextile tests for each geotextile to be used.

1.5. FIELD MEASUREMENTS

- A. Verify that survey benchmark and intended elevations for the Work are as shown on Drawings, or as provided by the Engineer.

1.6. QUANTITY FACTORS FOR VOLUME MEASUREMENT

- A. The tables on the Drawings shall be used as the basis for computing volumes of excavation below subgrade, trench lining material, special pipe foundation materials, and special backfill materials when such volumes constitute the basis for payment, as established elsewhere in the Contract Documents. No deviations from the factors shown shall be allowed because of variations between the several pipe materials and classes.
- B. No special computations of quantities shall be made for structures such as manholes, valve pits, catch basins, etc., which may occur in the various pipelines, but the quantities for payment noted above, where applicable to such structures, shall be computed by assuming that the appurtenant pipeline continues uninterrupted through such structure; such as for center-to-center of manholes.

1. Excavation Below Subgrade, Trench Lining Material and Special Pipe Foundations - The quantity for which payment shall be made will be computed by using the Quantity Factors based on nominal inside pipe diameter multiplied by the measured depth and by the measured length without regard to actual width or actual quantity.
2. Special Backfill Material - The maximum quantity of special backfill material for which payment shall be made will be computed by using the Quantity Factors based on nominal inside pipe diameter multiplied by the measured length and the measured height of special backfill, except that where soil or rock conditions allow steeper side slopes and narrow trench conditions (minimum width pipe O.D. plus 2 feet 0 inches), the quantity of special backfill shall be based on actual width, height, and length.

PART 2 PRODUCTS

2.1. ON-SITE MATERIALS

- A. Type A, Excavated Material - Material under this classification shall be derived solely from excavations necessary to construct the project to the lines and grades specified. If the excavated material on-site is approved for reuse and is suitable, it shall be used for filling or backfilling purposes. If he so elects, the Contractor may, at his own expense, substitute other types of material in place of Type A Material, provided such substitution is approved in advance by the Engineer. All replaced or surplus material shall be properly disposed of.

1. Unclassified Excavated Material

Type A-1 - Referred to as "excavated material" and from which all frozen material, boulders, trash and foreign debris greater than 6 inches in any dimension has been removed. Approved Type A-1 material shall be used for all backfilling except under structures.

Type A-2 - Referred to as "select excavated material" and from which all frozen material, humus, peat, roots, vegetation, ashes, trash, debris, and rocks or stones greater than 2 inches in any dimension have been removed.

2. Classified Excavated Material - Where the Contract Documents allow the reuse of excavated on-site materials as a substitute for off-site sources of gravel or sands, the minimum requirements for each of those excavated materials shall be the same as required for the equivalent off-site material. If such materials are used, submit for approval in writing the proposed methods of excavation, location of stockpiles, quantities of required sand and gravels, estimated excavation quantities and proposed excavation limits within the accepted excavation area. Provide a demonstration at least 10 days prior to commencement of excavation that the methods will provide consistent quantity and quality of material as specified for off-site gravels and sands. The Engineer will require subsurface investigations, sampling, and testing to confirm the extent and quality of the proposed material. Cost of all investigations, sampling, and testing shall be the Contractor's responsibility.

- B. Type E - Borrow Material

1. "Borrow material" is defined as approved on-site material required for fill or backfill in excess of the quantity of available approved material designated as Type "A" material.

2. No such borrow material shall be used on this project unless specified in the Contract Documents and except within the limits of borrow areas designated on the Drawings.
3. Approval of all borrow material must be obtained from the Engineer, and only material from approved sources shall be used.
4. Use of designated borrow areas shall be subject to the approval of the Engineer and Owner at all times. Test pits and analyses of borrow material shall be provided as required by the Engineer for each borrow area and at the expense of the Contractor. In addition, the Engineer may require full excavation and restoration plans for each borrow area. All borrow areas shall be stripped of topsoil and organic materials far enough in advance of operations that contamination of borrow material is prevented.

a. Unclassified Borrow Material

This material consists of a naturally occurring mixture of sand, silts, clay, gravel, deteriorated rock or other inorganic particles.

Type E-1 - Referred to as "common borrow material", from which all frozen material, boulders, trash or debris have been removed.

Type E-2 - Referred to as "select borrow material" and from which all frozen material, humus, peat, roots, vegetation, ashes, trash, debris, and rocks or stones greater than 6 inches in any dimension have been removed.

- b. Classified Borrow Material - Where the Contract Documents allow the use of on-site borrow areas as a substitute for off-site sources of gravels and sands, the requirements for each of those on-site materials shall be the same as off-site sources.

In addition, all of the requirements for "classified excavated material" (Type "E" material) must be met at least 10 days prior to the acceptance of approved borrow areas for use as a source of off-site materials (gravel or sand).

2.2. OFF-SITE MATERIAL

Within the following specifications where grain size distribution requires a maximum of 10 percent or less material capable of passing the #200 mesh sieve, the percentage of material finer (than the #200 sieve) by weight shall be determined by wet screening in accordance with ASTM Standard D-1140. It is the intent of the specifications to allow the use of granular materials from local suppliers. Material Specifications shall conform to the requirements of the New York State Department of Transportation, (NYSDOT) and shall conform to the latest NYSDOT Standard Specification.

No gravel, sand, crushed stone or run-of-crusher material shall be used for this project until acceptance is obtained from the Engineer, and only material from approved sources shall be used. A certified sieve analysis from the supplier shall be submitted for the Engineer's acceptance prior to the use of any materials specified in Article 2.02.

A. Bedding and Pipe Encasement

1. NYSDOT No. 1 Crushed Stone or Crushed Gravel - Bedding for PVC, DIP, and PCCP water main. Thoroughly washed, clean, sound, tough, hard, crushed limestone conforming to the requirements of NYSDOT Item No. 703.0201 or crushed gravel

conforming to the requirements of NYSDOT Item No. 703.0202, having the following gradation by weight:

<u>Percent Passing</u>	<u>Sieve</u>
100	1-inch
90 - 100	1/2-inch
0 - 15	1/4-inch

2. NYSDOT No. 2A Crushed Stone or Crushed Gravel – Bedding for DIP and PCCP water main. Shall be a No. 1 and No. 2 blend, thoroughly washed, clean, sound, tough, hard, crushed limestone conforming to the requirements of NYSDOT Item No. 703.0201 or crushed gravel conforming to the requirements of NYSDOT Item No. 703.0202, having the following gradation by weight:

<u>Percent Passing</u>	<u>Sieve</u>
100	1-1/2-inch
93-100	1-inch
27-58	1/2-inch
0-8	1/4-inch

3. NYSDOT Concrete Sand – Bedding for copper and polyethylene tubing. Washed, fine aggregate sand shall conform to the requirements of NYSDOT Item No. 703.07, having the following gradation by weight:

<u>Percent Passing</u>	<u>Sieve</u>
100	3/8-inch
90 - 100	No. 4
75 - 100	No. 8
50 - 85	No. 16
25 - 60	No. 30
10 - 30	No. 50
1 - 10	No. 100
0 - 3	No. 200

- B. Select Backfill - NYSDOT Subbase Type 2 crusher run stone or crusher run gravel. Material shall conform to the requirements of NYSDOT Item No. 304.12, having the following gradation by weight:

<u>Percent Passing</u>	<u>Sieve</u>
100	2-inch
25 - 60	1/4-inch
5 - 40	No. 40
0 - 10	No. 200

- C. Peagravel - NYSDOT Type 1A screened gravel for the annular space between the carrier pipe and the casing pipe. Screened gravel shall conform to the requirements of NYSDOT Item No. 703.0203 and have the following gradation by weight:

<u>Percent Passing</u>	<u>Sieve</u>
100	1/2-inch
90 - 100	1/4-inch
0 - 15	1/8-inch

- D. Pipe Trench Special Backfill - NYSDOT subbase material 304.02, Type 4 crusher run stone or crusher run gravel. Material shall conform to the requirements of NYSDOT Item No. 304.14, having the following gradation by weight:

<u>Percent Passing</u>	<u>Sieve</u>
100	2-inch
30 - 65	1/4-inch
5 - 40	No. 40
0 - 10	No. 200

- E. Follow NYSDOT Standard Specifications if gradation data varies from those listed above.
- F. Recycled concrete or asphalt pavement shall not be allowed.
- G. Slag of any type shall not be allowed.
- H. Flowable fill shall not be allowed.
- I. Type F - Gravel-Cement Mixtures
1. Shall be a mixture of 15 parts gravel to 1 part cement by weight.
 2. Gravel shall be Type B-3.
 3. Cement shall be Type I Portland cement.
 4. Mixing of material shall be performed in an approved mixer.
 5. The mixture shall be placed and compacted in accordance with Section 02228.

2.3. REQUIRED MATERIALS

- A. Trench Backfill
1. In Pavement, to Subbase - Select backfill.
 2. Other Areas - Type A-1 or Type B-1 bank run gravel.
- B. Pipe Trench Special Backfill - NYSDOT Item No. 304.14.
- C. Pipe Bedding - Per pipe type.
- D. Road Construction
1. Base - NYSDOT course 304 Type 2.
 2. Subbase - NYSDOT subbase course 304 Type 4.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Submit for approval fill materials to be reused.

3.2. PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Prior to start of construction, notify Dig Safely, and have staked or marked all underground utilities. Utilities include water, gas, electrical, telephone, cable, storm sewer, sanitary sewers, laterals, and services. In the event such locations indicate a possible interference, or when needed to locate points of connection to existing facilities, perform exploratory excavations to determine the utilities' location and elevation. Provide the Engineer with the results of the exploratory excavations for his review. Allow the Engineer sufficient time to determine any changes required as a result of such exploratory excavations prior to start of construction.
- C. Abandoned pipes and laterals shall be filled with flowable concrete and capped or removed entirely.
- D. Conduct operations such that no interruptions to the existing utility system shall occur. Where existing storm drain systems are being replaced or interrupted, provide temporary bypass pumping or temporary piping to maintain flow around the work site such that no backups occur in these sewer systems.
- E. Maintain existing manholes, catch basins, and other utility structures above and below grade which are to remain in their pre-work condition. Any material or debris entering same due to the operation shall be promptly removed.
- F. Protect plant life, lawns, rock outcropping and other features remaining as a portion of final landscaping.
- G. Protect control points, bench marks, existing structures, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic. Preserve the control points provided by the Engineer throughout the life of the project, and accurately replace any such point, which is damaged or moved, at Contractor's expense.
- H. Cut out soft areas of subgrade not capable of insitu compaction. Backfill with Type III pipe foundation and compact to density equal to or greater than requirements for subsequent backfill material.
- I. Brace walls and slabs of structures to support surcharge loads and construction loads imposed by backfilling operations.
- J. Maintain a stable, dry backfill area in accordance with Section 02141.
- K. Remove all water, snow, ice and debris from surfaces to accept fill materials and from the backfill material. No calcium chloride or other chemicals shall be used to prevent freezing.
- L. Areas to receive compacted fill shall be graded to prevent surface runoff and ponding in accordance with Section 02110.
- M. No fill or backfill material may be used without approval of the Engineer.
- N. No geotextile fabric may be used without approval of the Engineer.
- O. Backfill operations shall be started at the lowest elevation in the area to be backfilled, and continue, in horizontal layers, upward to the limits specified.
- P. Backfill material shall be within 2 percent of the optimum moisture content for that material.

- Q. Any crushed gravel stockpiles which have undergone excessive particle segregation shall be reviewed and approved by the Engineer prior to placement.

3.3. TRENCH EXCAVATION

- A. Trenches for underground piping, ductwork, drains, and similar utilities shall be excavated and maintained as shown on the Drawings and specified in this Section. Trench widths shall be held within the minimum and maximum limits shown on the Drawings. If a prefabricated, mobile shield is utilized in lieu of conventional sheeting and bracing in pipe trenches, the bottom of the shield shall be maintained as high as possible (preferably above the spring line of the pipe) so as to prevent disturbance of the pipe foundation material and to avoid forces which would tend to pull pipe joints apart when the shield is dragged forward. Gouged openings or troughs left by the shield shall be filled with additional pipe foundation material and thoroughly compacted. Installation of sheeting and bracing and use of mobile shields shall be in complete accordance with all details of applicable safety codes, rules and regulations including all applicable local, State, Federal, and OSHA regulations.
- B. Excavation shall be such that a flat bottom trench of allowable width is established at the required subgrade elevation for subsequent installation of pipe foundation material.
- C. If indicated on the Drawings, as directed by the Engineer or when required as a result of unsuitable soil conditions, trench excavation shall be carried below the required subgrade and a special pipe foundation installed in conformance with the Contract Documents. In any event, operations shall result in stable trench walls and a stable base free from standing water, consistent with trench width requirements.
- D. Bedrock, boulders and cobbles greater than 6 inches shall be trimmed back or removed on each side of the trench so that no rock protrudes within 6 inches of the installed pipe. Rock shall also be trimmed back across the bottom of the trench so that no rock, boulder or cobble protrudes within 4 inches of the installed pipe.
- E. In general, trenches shall not be opened for more than 50 feet in advance of installed pipe. Excavation of the trench shall be fully completed at least 5 feet in advance of pipe laying operations. No more than 40 feet of trench shall be left open overnight.

3.4. EXCAVATION CLASSIFICATION

- A. All material excavated will be measured and classified as provided herein.
 - 1. Unclassified Excavation - "Unclassified excavation" shall include all materials excavated within the authorized lines and grades prescribed in the Drawings. Unclassified excavation shall include "rock excavation" as well as "common excavation" as defined herein. Unless specifically designated otherwise in the appropriate bid items of the Bid Proposal, all excavation shall be considered to be "unclassified excavation."
 - 2. Common Excavation - "Common excavation" shall include all excavation except "rock excavation." All unconsolidated and non-indurated material, rippable rock, loose rock, soft mineral matter, weathered rock or saprolite, and soft or friable shale which is removable with normal earth excavation equipment shall be considered "common excavation." All boulders and detached pieces of solid rock or concrete or masonry less than 1 cubic yard in volume shall be classified as "common excavation."
 - 3. Rock Excavation - "Rock excavation" shall include all sound solid masses, layers and ledges of consolidated and indurated rock or mineral matter of such hardness,

durability and/or texture that it is not rippable or cannot be excavated with normal earth excavation equipment. Should a conflict arise as to the classification of excavation as either "common" or "rock," the following tests shall be used in the appropriate determination:

- a. Where practicable, a late model tractor mounted hydraulic ripper equipped with a one digging point of standard manufacturer's design adequately sized for use with and propelled by a crawler-type tractor rated between 210 and 240 net fly-wheel horsepower, operating in low gear, shall be utilized. Should the suspect material not be effectively loosened or broken down by ripping in a single pass with the aforementioned ripper, the material shall be classified as "rock."
- b. In situations where inter-bedded strata of "common excavation" material and "rock excavation" material are encountered in the same excavation, the individual classification of those materials shall be made on an average percentage basis of the occurrence of those materials as measured in stratigraphic sections and as approved by the Engineer.
- c. When rock is encountered in excavations, it shall be removed by jackhammering or any other method suitable and safe considering the proximity of existing utilities or facilities.

3.5. UNAUTHORIZED EXCAVATION

- A. The Contractor shall not be entitled to additional compensation for unauthorized excavations carried beyond or below the lines and subgrades prescribed in the Contract Documents. The Contractor shall refill such unauthorized excavations at his own expense, and in conformance with the following provisions of this Article.
- B. Should the Contractor, through negligence or for reasons of his own, carry his excavation below the designated subgrade, fill concrete or such other material as may be approved by the Engineer, as specified in Part 2, shall be furnished and placed as backfill in sufficient quantities to reestablish the designated subgrade surface. Granular material used for backfilling shall be spread and compacted in conformance with the requirements of later Articles of the section, and to the percentage compaction outline therein. The cost of any tests associated with this refilling operation shall be borne by the Contractor.
- C. If the maximum widths of pipe trenches are exceeded, the installed pipes shall be fully cradled in a minimum of 6 inches of fill concrete, as specified elsewhere, and at the Contractor's expense. Excavation below subgrade which is ordered by the Engineer because the normal subgrade has been disturbed by the Contractor's operations shall be considered as unauthorized excavation.

3.6. MAINTENANCE OF EXCAVATIONS

- A. All excavations shall be properly and legally maintained while they are open and exposed. Sufficient and suitable barricades, warning lights, flood lights, signs, etc., to protect life and property shall be installed and maintained at all times until the excavation has been backfilled and graded to a safe and satisfactory condition. All signs, markers, barricades shall conform to the requirements of the manual of Uniform Traffic Control Devices. All barricades, signs and markers shall be reflectorized.
- B. To maintain traffic and safety temporary plating over trenches consisting of steel plates shall be used to temporarily bridge trench excavations. Plates shall be of size and positioned to

provide adequate bearing at plate edges, shall be securely anchored, and shall be fitted in place in a manner to minimize noise when crossed by traffic. Plates shall be of sufficient thickness to safely carry heavy traffic without detrimental deflection; however, unless otherwise specified, the minimum thickness of plates shall be 1-inch.

- C. Plate edges exposed to traffic shall be feathered with asphalt mix as part of trench excavation work. Work includes surveillance and adjustment of plating over trenches which shall be provided by the Contractor during non-working hours, weekends, and holidays.
- D. Additional Requirements for Support Systems for Trench Excavations
 - 1. Excavation of material to a level no greater than 2 feet below the bottom of the members of a support system shall be permitted, but only if the system is designed to resist the forces calculated for the full depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the support system.
 - 2. Installation of a support system shall be closely coordinated with the excavation of trenches.

3.7. PIPE FOUNDATIONS

- A. All pipes, fittings or specials which are to be installed in the open trench excavation shall be properly bedded in, and uniformly supported on pipe foundations of the various types specified herein and shown on the Drawings. Flat-bottom trenches of required width shall be excavated to the necessary depth as required in the Table of Quantity Factors shown on the Drawings and maintained in accordance with this section prior to installing the foundation. Trenches shall be dewatered and all work performed in a dry trench.
- B. Bedding material shall be spread in maximum of 8-inch layers to the midpoint of the pipe and each layer shall be compacted until the required total depth of the bedding has been built up. Compaction methods include hand tamping with T-bars, flat heads, shovel slicing, as well as mechanical compactors. The Contractor shall perform his bedding operations with care to maintain line and grade.
- C. The pipe foundation above the midpoint of the pipe shall be spread and compacted in 12-inch layers to 12 inches above the top of the pipe. When PVC, plastic or polyethylene pipe is used, do not compact directly over pipe until the depth of backfill has reached 2 feet above the top of the pipe.
- D. Type I - Normal Soil Conditions - Unless shown otherwise in the Drawings, all pipe shall be supported on Type I foundation. The trench shall be excavated from 4 to 8 inches deeper than the bottom of the pipe, depending on the diameter of the pipe. Stone bedding per pipe type as described above shall be furnished, placed and compacted in the trench for its full width such that, after the pipe has been uniformly bedded in this material, the required minimum depth of 4-inch pipe bedding material remains between pipe and undisturbed trench bottom. Suitable holes shall be provided in the trench bottom to permit adequate bedding of bells, couplings, or similar projections. The pipe bedding shall extend upward to a point 12 inches over the top of the pipe. Minimum width of pipe foundation shall be outside diameter of pipe plus 2 feet 0 inches.
- E. Type II - Moderately Unstable Soil Conditions - When specifically called for on the Drawings, or when ordered by the Engineer, the pipe shall be supported on Type II foundation. The foundation shall be installed where a suitable supporting soil or rock stratum occurs within 2 feet, more or less of the bottom of the pipe. The trench shall be excavated to the depth

necessary to reach the suitable supporting stratum. Pipe trench special bedding, as ordered by the Engineer as described above, shall then be furnished and placed in the trench for its full width. The material shall be spread in 12-inch layers, and each layer shall be compacted. The pipe foundation material to be supported on Type VII foundation, geotextile fabric foundation. The crushed stone or gravel depth shall extend from the supporting stratum up to an elevation 4, 6 or 8 inches below the bottom of the pipe depending upon the pipe diameter. The bedding material shall then be installed in accordance with Type I pipe foundation requirements.

- F. Type III - Unstable Soil Conditions - When specifically called for on the Drawings, or when ordered by the Engineer, the pipe shall be supported on Type III foundation. The foundation shall be installed where no suitable supporting soil or rock stratum exists within 2 feet of the bottom of the pipe. The trench shall be excavated 2 feet deeper than the bottom of the pipe. Each side of the trench shall be supported and maintained by a permanent system of tight, continuous sheeting (and bracing) which shall be driven below the trench bottom as shown and which shall extend to an elevation of at least 12 inches above the top of the pipe. Minimum plank size to be 2-inch x 12-inch tongue and groove per Section 02161.

Pipe trench special bedding material shall then be furnished and placed in the trench for its full width, and to a depth of 8 inches. The pipe foundation material to be supported on a Type VII foundation, geotextile fabric foundation. Crushed stone, special backfill material shall then be furnished and placed in the trench for its full width. All material shall be spread in layers and each layer shall be compacted until their respective total depths have been built up as required. The select backfill material depth shall extend a distance of 12 inches from the top of the compacted trench lining up to an elevation 4, 6 or 8 inches below the bottom of the pipe, depending upon the pipe diameter. Bedding material shall then be installed in accordance with Type I pipe foundation requirements. All installed sheeting below an elevation established at 12 inches above the top of the pipe shall be left in place and undisturbed. Only the cross struts and walers shall be gradually removed as construction proceeds.

- G. Type IV - Reinforced Concrete Encasement - When specifically called for on the Drawings, or when ordered by the Engineer, the pipe shall be supported on Type IV foundation. The trench shall be excavated to a depth below the bottom of the pipe equal to one-quarter of the inside diameter of the pipe or 6 inches, whichever is greater. The excavated space shall then be completely filled with, and the entire pipe encased in, concrete such that the minimum concrete encasement at any point around the outside barrel of the pipe measured 6 inches thick. The total minimum width of the concrete encasement shall equal the outside diameter of the pipe plus 12 inches and such minimum width shall be constant for the entire length of the encasement. Concrete mix, formwork, reinforcing, curing, etc., shall be in accordance with the requirements of Section 03001. Freshly placed concrete shall be maintained free from groundwater and no backfilling of the trench shall begin until initial set has taken place, but not less than 3 hours has elapsed after the encasement has been cast. Backfill a depth of 12 inches over top of concrete before beginning compaction with mechanical equipment.
- H. In the event an underground pipe is shown under a base slab, the pipe shall be encased in concrete for its entire length under the slab in accordance with details shown on the Drawings. Where no detail is shown, encasement shall be formed to provide a minimum of 8 inches of concrete cover reinforced with #5 reinforcing bars spaced 12 inches each way. When the top of the pipe is within 12 inches of the bottom of the slab, the encasement shall be tied to the base slab with reinforcing. The General Contractor shall be responsible for encasement of all pipes under slabs including piping by other contracts.
- I. Type V - Concrete Cradle - When specifically called for on the Drawings or when ordered by the Engineer, the pipe shall be supported on Type V foundation. The foundation shall be furnished and installed equal to the Type IV foundation, "Concrete Encasement," except that

only that portion of the encasement at and below the horizontal diameter of the pipe shall be encased, forming a true cradle under the bottom half of the pipe. Maintain cradle free from groundwater for a period of three hours or until initial set has taken place. Complete pipe foundation in 12-inch lifts as for Type I pipe foundation.

- J. Type VI - Plain Concrete Encasement - When specifically called for on the Drawings, or when ordered by the Engineer, the pipe shall be supported on Type VI foundation. The foundation shall be furnished and installed equal to the Type IV foundation, "Reinforced Concrete Encasement," except that no steel reinforcing is required. Maintain encasement free of groundwater for a period of three hours or until initial set has taken place.
- K. Type VII - Geotextile Fabric Foundation - When specifically called for on the Drawings, or when ordered by the Engineer, the pipe foundation shall be supported on a geotextile fabric foundation. The fabric to be placed on the bottom of the excavated foundation and extended upwards to the top of the Type I pipe foundation where it can then be placed flat with a minimum overlap of 6 inches. Longitudinal overlaps to be a minimum of 2 feet. Fabrics to be installed and stretched tight, have no wrinkles so that the fabric will be in tension when placing the pipe foundation material. Geotextile material to be Trevia Type S 1127 by Hoechst Corporation; Mirafi Type 500X by Celanese Corporation; or equal.
- L. Type VIII - Pressure Pipe Foundation

- 1. Pipe and fittings shall be laid on stable foundations, free from standing water, and trimmed to shape. Type A 2 material as described above in Part 2 shall be used for pipe foundation unless otherwise shown on the Drawings. In particular, stones 2 inches or larger shall be removed from the bearing surface of the pipe foundation. At the joints, enough depth and width shall be provided to permit the pipe layer to reach entirely around the pipe so that the joints may be made in a proper manner. Pipes shall have full bearing throughout their entire length, which shall be accomplished by shaping the bottom of the ditch or adequately tamping the backfill under the pipe in accordance with minimum compaction requirements of Section 02228. When laid in tunnels, pipes shall be blocked in such a manner as to take the weight off the bells. Pipe laid in normal trench excavation shall not be laid on wood blocking. Mechanical type joints shall be tightened within the AWWA recommended torque range.

- 2. The following sources shall be reviewed by the Contractor for installation guidelines and requirements:

PIPE MATERIAL	SOURCES
Ductile Iron	AWWA Standard C600; Project Specification, Section 02661; Project Drawings; manufacturer's recommendations.
PVC Pipe	ASTM Standard D2321; Project Specification, Section 02661; Project Drawings; manufacturer's recommendations.
Copper	Project Specification, Section 02661; Project Drawings; manufacturer's recommendations.

- 3. Unless otherwise shown on the Drawings, as a minimum, all pipe shall be backfilled to the springline, including hand tamping with T-bars, shovel slicing, and flatheads, and mechanically compacted and the remaining backfill placed in 12-inch lifts to 1 foot above the crown of the pipe in accordance with minimum compaction requirements of Section 02228. Backfill material within 12 inches of the pipe shall be free of stones greater than 2 inches in any dimension. Unless otherwise shown on the Drawings, the minimum total finished cover over the top of the pipe barrel of all pressure pipe shall be 5 feet.

3.8. EXPLORATORY EXCAVATIONS

- A. Where shown or ordered by the Engineer, the Contractor shall excavate and backfill test pits in advance of construction to determine conditions or location of existing facilities. The Contractor shall perform all work required in connection with excavating, stockpiling, maintaining, sheeting, shoring, backfilling, and restoring the surface for the test pits.
- B. Test pits which the Contractor excavates that are not shown on the Drawings or specified or ordered shall be at the Contractor's expense.
- C. No test pits will be dug prior to utility company stakeout.
- D. Backfill and Fill Materials
 - 1. Excavated materials may be used for backfill provided:
 - a. Material is sandy, loamy, or similar to bank run gravel.
 - b. Material is free from debris, hazardous materials, frozen materials, organic or other deleterious materials. Material greater than 4 inches in any direction is unacceptable. Material greater than 2 inches in any direction is unacceptable for backfill directly against the water main.
 - c. Maximum dry density and optimum moisture content are determined in accordance with the above.
 - d. Material is reviewed and deemed acceptable by the Engineer.
 - 2. Use select granular material within 5 feet or within a 1 on 1 slope from the trench to the edge of pavement of all roadways.
- E. Backfilling shall be in accordance with Articles 3.10 and 3.11 of this specification.
- F. Cold patch for temporary repair shall be placed as directed by the Engineer.

3.9. GENERAL BACKFILLING REQUIREMENTS

- A. Backfilling shall be started as soon as practicable and after structures or pipe installations have been completed and inspected, concrete has acquired a suitable degree of strength, and subgrade waterproofing materials have been in place for at least 48 hours. Backfilling shall be carried on expeditiously thereafter. Backfill shall be started at the lowest section of the area to be backfilled. Natural drainage shall not be obstructed at any time.
- B. Backfill spaces shall be inspected prior to backfilling operations and all unsuitable materials, including sheeting, bracing forms and debris, shall be removed. No backfill shall be placed against foundation walls on structural members unless they are properly shored and braced or of sufficient strengths to withstand lateral soil pressures.
- C. Backfill material shall be inspected prior to placement and all roots, vegetation, organic matter, or other foreign debris shall be removed. Stones larger than 12 inches in any dimension shall be removed or broken. Stones shall not be allowed to form clusters with voids.

- D. Backfill material shall not be placed when moisture content is more than 2 percent above optimum or is otherwise too high to allow proper compaction. When material is too dry for adequate compaction, water shall be added to the extent necessary.
- E. No backfill material shall be placed on frozen ground nor shall the material itself be frozen or contain frozen soil fragments when placed. No calcium chloride or other chemicals shall be added to prevent freezing. Material incorporated in the backfilling operation which is not in satisfactory condition shall be subject to rejection and removal at the Contractor's expense.
- F. If the Contractor fails to stockpile and protect on-site excavated material acceptable for backfill, then the Contractor shall provide an equal quantity of acceptable off-site material at no expense to the Owner.
- G. Remove surplus backfill material from site.

3.10. PIPE TRENCH BACKFILL

- A. Pipe foundations, to a depth of 1 foot above the pipe, shall be placed in 12-inch layers and thoroughly compacted by approved mechanical methods to ensure firm bedding and side support. Refer to Section 02228 for density requirements. For plastic or polyethylene pipe materials, do not compact directly over pipe until the 2 feet of cover has been installed. Pipe foundations are specified in the appropriate sections covering underground piping. The remainder of the trench shall be backfilled and consolidated in accordance with Section 02228 and by one of the following methods, depending on the nature of backfill material and location of trench.
- B. Procedure I - For cross-country pipelines under uncultivated areas where subsequent settlement can be tolerated:
 - 1. Backfill material shall be placed in the trench and consolidated by mechanical means to prevent voids. Refer to Section 02228 for density requirements. The top layer shall be thoroughly compacted mechanically and slightly mounded to allow for subsequent settlement. Maintain trench surface until completion of contract and regrade as necessary within guarantee period.
- C. Procedure II - For lawns, cultivated fields, gardens and non-paved areas where minimum subsequent settlement is required: Same as for Procedure I, refer to Section 02228 for density requirements. Top of back fill shall be compacted by mechanical means and surface maintained prior to topsoil installation, fine grading, and seeding.
- D. Procedure III - For streets, driveways, parking areas, highways, shoulder areas, miscellaneous type pavements, walks, curbs, gutters and other specified areas:
 - 1. Backfill material shall be placed in layers not exceeding 12 inches thick and each layer thoroughly compacted by a backhoe mounted hydraulic or vibratory tamper, up to 2 feet under pavement (below top of subgrade). The upper 2 feet shall be compacted using hand-guided or small self-propelled vibratory or static rollers or pads in layers not exceeding 6 inches in thickness. Refer to Section 02228 for density requirements.
 - 2. For pipelines in or across State Highways, backfill material and compaction shall conform with the Standard Specifications or specific requirements of the State in which the project is located.

3. Where a gravel-cement mixture (Type F) backfill is specified, the dry gravel and cement mixture shall be placed in the trench, in 6-inch layers and thoroughly tamped using mechanical or vibratory tampers. Water shall not be introduced to the gravel-cement mixture during placing and compacting thereof.

3.11. BACKFILL FOR STRUCTURES

- A. Backfill shall be placed in layers not exceeding 8 inches thick and thoroughly compacted by mechanical means.
- B. Where pipelines or conduits are to be placed on structural backfill, all backfill under the pipes shall be Size D-2 crushed stone placed in 8-inch layers and mechanically tamped, unless an alternate method of supporting such pipes is specified.
- C. Hydraulic compaction by ponding or jetting will not be permitted except in very unusual conditions and then only upon written request and demonstration of its effectiveness by the Contractor and the written acceptance by the Engineer.

3.12. PERIODIC CLEAN-UP; BASIC RESTORATION

- A. When work involves installation of sewers, drains, water mains, manholes, underground structures, or other disturbances of existing features in or across streets, rights-of-way, easements or private property, the Contractor shall (as the work progresses) promptly backfill, compact, grade and otherwise restore the disturbed area to a basic condition which will permit resumption of pedestrian or vehicular traffic and any other critical activity or function consistent with the original use of the land. The requirements for temporary paving of streets, walks, and driveways are specified elsewhere. Unsightly mounds of earth, large stones, boulders and debris shall be removed so that the site presents a neat appearance.
- B. The Contractor shall perform the clean-up work on a regular basis and as frequently as required. Basic site restoration in a particular area shall be accomplished immediately following the installation or completion of the required facilities in that area. Furthermore, such work shall also be accomplished if partially completed facilities must remain incomplete for some time period due to unforeseen circumstances.
- C. Upon failure of the Contractor to perform periodic clean-up and basic restoration of the site to the Engineer's satisfaction, the Owner may, upon five days prior written notice to the Contractor, without prejudice to any other rights to remedies of the Owner, cause such work for which the Contractor is responsible to be accomplished to the extent deemed necessary by the Engineer, and all costs resulting therefrom shall be charged to the Contractor and deducted from the amounts of money that may be due him.

3.13. TOLERANCES

- A. Top Surface of Backfilling - Under Paved Areas - $\pm 1/2$ inch from required elevations.
- B. Top Surface of General Backfilling - ± 1 inch from required elevations.

3.14. FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Section 01400.
- B. The Contractor shall designate an experienced person who shall be responsible for inspection of excavations on a daily basis, document, and maintain daily trenching and excavation logs per OSHA 29 CFR 1926.

- C. Tests and analysis of fill material will be performed in accordance with ASTM D1557 and with Section 02228.
- D. Compaction testing will be performed in accordance with ASTM D1556, ASTM D2922, and with Section 02228.
- E. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.
- F. Frequency of Tests - 1,000 linear feet.

3.15. PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01500.
- B. Regrade and recompact fills subjected to vehicular traffic.

END OF SECTION

SECTION 02226

ROCK REMOVAL

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Removal of subsurface rock encountered during excavation, utilizing mechanical methods.

1.2. RELATED SECTIONS

- A. Information Available to Bidders - Subsurface Report; bore hole locations and findings of subsurface materials.
- B. Section 02205 - PROTECTION OF EXISTING FACILITIES
- C. Section 02225 - TRENCHING
- D. Section 03001 - CONCRETE

1.3. UNIT PRICES

- A. Rock Quantity - Determined by quantity of rock indicated in the Contract Documents.
- B. Determination of Unit Measurements - Identified by site measurements made by the Engineer and calculated in accordance with payment limits established in the appropriate Bid Item Description.

1.4. REFERENCES

- A. Code of Federal Regulations (CFR) - U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), Construction Standards and Interpretation, 29 CFR Part 1926.
- B. Department of Transportation (DOT) - Title 49 (49 CFR), Parts 106, 107, 171-179, 383, and 390-399.

1.5. DEFINITIONS

- A. "Rock" is defined to include all sound solid masses, layers and ledges of consolidated and indurated rock or mineral matter of such hardness, durability and/or texture that it is not ripplable or cannot be excavated with normal earth excavation equipment.
- B. All boulders and detached pieces of solid rock or concrete or masonry 1 cubic yard in volume or greater, shall be classified as "rock."
- C. Should a conflict arise as to the classification of the material to be removed, the following tests shall be used to aid in the determination:
 - 1. Where practicable, a late model tractor-mounted hydraulic ripper equipped with a one digging point of standard manufacturer's design adequately sized for use with and propelled by a crawler-type tractor rated between 210 and 240 net fly-wheel horsepower, operating in low gear, shall be utilized.

Should the suspect material not be effectively loosened or broken down by ripping in a single pass with the aforementioned ripper, the material shall be classified as "rock."

2. In situations where interbedded strata of "common excavation" material and "rock excavation" material are encountered in the same excavation, the individual classification of those materials shall be made on an average percentage basis of the occurrence of those materials as measured in stratigraphic sections as approved by the Engineer.

1.6. REGULATORY REQUIREMENTS

- A. Obtain permits from authorities having jurisdiction before removal by mechanical methods is started.

1.7. SCHEDULING

- A. Schedule work to avoid disruption to occupied buildings nearby.
- B. Schedule work to minimize disruption of vehicular traffic in nearby public thoroughfares.
- C. Coordinate schedule with local police and fire departments, including owners of nearby existing facilities.
- D. Schedule Work to coordinate with concrete placement. Reference Section 03001.

1.8. SUBMITTALS

- A. Submit plan of action for rock removal. As a minimum, include a site plan showing starting date, preconstruction inspection requirements, location, direction of progress, finish point, and completion schedule.

1.9. ORDER OF WORK

- A. After the rock is determined, proceed with rock removal in accordance with the approved plan of action.
- B. The Contractor shall schedule his operations so that all rock excavation within 100 feet of any proposed structure is completed before any structure work is started.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Verify site conditions and location of nearby buildings, structures and other facilities, recording irregularities which exist prior to work of this section.
- B. Verify locations of nearby underground utilities and structures. Reference Section 02205.

3.2. PREPARATION

- A. Identify required lines, levels, contours, and datum; establish quantity of rock to be removed to meet project requirements.

3.3. ROCK REMOVAL - GENERAL

- A. Allow time for Engineer to take site measurements of rock quantities to be removed.
- B. Cut away rock at bottom of excavation to form level bearing surface for foundations of buildings and structures.
- C. Remove shaled layers to provide sound and unshattered base for pipe bedding.
- D. In utility trenches, trim rock to 4 inches below bottom of installed pipe and 12 inches wider than outside diameter of installed pipe.
- E. Remove excavated materials from site.
- F. Correct unauthorized rock removal in accordance with backfilling and compaction requirements of Section 02225, concrete fill, Section 03001, under direction of Engineer.

3.4. ROCK REMOVAL - MECHANICAL METHOD

- A. Excavate and remove rock by mechanical methods at locations required by the Contract Documents and when trimming bottom or sides of excavation is necessary to meet project requirements.
- B. Drill holes and utilize expansive tools, wedges, and/or other mechanical means, as appropriate, to fracture rock.

3.5. FIELD QUALITY CONTROL

- A. Provide for Engineer's inspection of foundation bearing surfaces and cavities formed by removed rock.

END OF SECTION

SECTION 02228

COMPACTION

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Compaction requirements and test methods.
- B. Compact all subgrades, foundations, embankments, trench backfills, filled and backfilled material as specified.

1.2. RELATED SECTIONS

- A. Section 01025 – GENERAL CONTRACT BID ITEMS
- B. Section 01400 - QUALITY CONTROL: Inspection and testing by laboratory services.
- C. Section 02225 - TRENCHING

1.3. REFERENCES

- A. ASTM D698 - Laboratory Compaction of Soil Using Standard Effort
- B. ASTM D1556 - Density of Soil in Place by the Sand-Cone Method
- C. ASTM D1557 - Laboratory Compaction of Soil Using Modified Effort
- D. ASTM D2922 - Density of Soil in Place by Nuclear Methods
- E. ASTM D3017 - Water Content of Soil in Place by Nuclear Methods

1.4. SUBMITTAL

- A. Submit in writing a description of the equipment and methods proposed to be used for compaction.

1.5. QUALITY ASSURANCE

- A. The Contractor shall adopt compaction methods which will produce the degree of compaction specified herein, prevent subsequent settlement, and provide adequate support for the surface treatment, pavement, structure and piping to be placed thereon, or therein, without damage to the new or existing facilities.
- B. The natural subgrade for all footing, mats, slabs-on-grade for structures or pipes shall consist of firm undisturbed natural soil, at the grades shown on the Drawings.

- C. After excavation to subgrade is completed, the subgrade shall be compacted if it consists of loose granular soil or if its surface is disturbed by the teeth of excavating equipment.
 - 1. This compaction shall be limited to that required to compact loose surface material and shall be terminated in the event that it causes disturbance to underlying fine-grained soils, as revealed by weaving or deflection of the subgrade under the compaction equipment.
 - 2. If the subgrade soils consist of saturated fine or silty sands, silts, or clay or varied clays, no compaction shall be applied.

PART 2 PRODUCTS

2.1. MATERIALS

- A. Materials to be compacted shall be as specified in Section 02225.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Examine spaces to be filled beforehand and remove all unsuitable materials and debris including sheeting, forms, trash, stumps, plant life, etc.
- B. Inspect backfill and fill materials beforehand and remove all roots, vegetation, organic matter, or other foreign debris. Stones larger than 12 inches in any dimension shall also be removed or broken into smaller pieces.
- C. No backfill or fill material shall be placed on frozen ground nor shall the material itself be frozen or contain frozen soil fragments.
- D. Spaces to be filled shall be free from standing water so that placement and compaction of the fill materials can be accomplished in "dry" conditions.

3.2. PREPARATION

- A. Brace walls and slabs of structures to support surcharge loads and construction loads imposed by compaction operations.
- B. Each layer of fill shall be compacted to the specified density the same day it is placed.
 - 1. The moisture content of backfill or fill material shall be adjusted, if necessary to achieve the required degree of compaction.
- C. Compact each lift in accordance with Table 1.
- D. Match compaction equipment and methods to the material and location being compacted in order to obtain specified compaction, with consideration of the following guidelines:
 - 1. Rubber-tired rollers are preferred for most areas to prevent bridging of softer materials.

2. Double smooth drum rollers may be used provided that careful inspection can prevent bridging.
3. Compaction roller should be lighter in weight than proof-rolling equipment, with a minimum compaction force of 350 pounds per linear inch (PLI).
4. Vibratory compaction is preferred for dry, granular materials.
5. Hand compaction equipment such as impact rammers, plate or small drum vibrators, or pneumatic buttonhead compactors should be used in confined areas.
6. Hydraulic compaction by ponding or jetting will not be permitted except in unusual conditions, and then only upon written approval by the Engineer and after a demonstration of effectiveness.
7. Backhoe-mounted hydraulic or vibratory tampers are preferred for compaction of backfill in trenches under pavements over 4 feet in depth. The upper 4 feet shall be compacted as detailed above or with hand-guided or self-propelled vibratory compactors or static roller.
8. For plastic pipelines (PVC, PE or PB) do not compact directly over center of pipe until backfill has reached 2 feet above top of pipe.

TABLE 1

COMPACTION REQUIREMENTS

Construction Element	Maximum Compaction Layer Thickness (Inches)	ASTM	Minimum Compaction
I. STRUCTURES*			
a. Fill beneath foundation elements and under slabs-on-grade - hand-guided compaction	6	D1557	95%
Fill beneath foundation elements and under slabs-on-grade - self-propelled or tractor-drawn compaction	8	D1557	95%
b. Fill around structures and above footings	8	D1557	95%
II. TRENCHES**			
a. Fill under pipelines and pipe bedding	8	D1557	95%
b. Pipe sidefills and top 4 feet of pipe backfill under pavements	12	D1557	93%
c. Backfill below 4 feet under pavement	18	D1557	90%
d. Backfill under lawns, gardens and cultivated fields	24	D1557	90%
e. All other trenches	36	D698	85%
III. EMBANKMENTS AND FILLS			
a. Fill under streets, parking lots, and other paved areas	12	D1557	92%
b. Embankments not supporting pavement or structures	18	D1557	90%
c. Rough site grading	24	D698	85%

- * Where structural loads are carried by piles, caissons or other deep foundations, minimum compaction may be reduced to 95 percent.
- ** The first 1 foot above pipelines shall have a compacted thickness of 6 inches.

3.3. FIELD QUALITY CONTROL

A. Material Testing

1. The Engineer reserves the right to order testing of materials at any time during the work.
2. Testing will be done by a qualified, independent testing laboratory in accordance with this section and Section 01400.
3. The Contractor shall aid the Engineer in obtaining representative material samples to be used in testing.
4. For each material which does not meet specifications, the Contractor shall reimburse the Owner for the cost of the test and shall supply an equal quantity of acceptable material, at no additional compensation.
5. The Contractor shall anticipate these tests and incorporate the time and effort into procedure.

B. Compaction Testing

1. The Engineer reserves the right to order the qualified independent testing laboratory to conduct in-place density tests of compacted lifts.
2. Testing may be conducted for every 200 cubic yards of fill or backfill, or every 100 linear feet of trench backfill placed.
3. The Contractor shall dig test holes and provide access to all backfill areas at no additional compensation when requested by the Engineer.
4. For each test which does not meet specifications, the Contractor shall retest at his cost. If the retest does not meet specifications, the Contractor shall replace and recompact material to the specifications at no additional cost to the Owner.
5. The Contractor shall anticipate these tests and incorporate the time and effort into procedures.
6. Nuclear moisture density testing by "probe" methods will be acceptable for compacted layers not exceeding 8 inches in thickness.
 - a. Nuclear "backscatter" methods will be acceptable only for testing asphalt paving layers not in excess of 3 inches in thickness.
 - b. Only certified personnel will conduct nuclear testing.
 - c. If the nuclear method is utilized, the results shall be checked by at least one in-place density test method described above.

- C. Unacceptable Stockpiled Material - Stockpiled material may be tested according to Material Testing Materials.
- D. Alternate Methods of Compaction - The Contractor may employ alternate methods of compaction if the desired degree of compaction can be successfully demonstrated to the Engineer's satisfaction.
- E. Select Material - On-Site
 - 1. Any on-site material may be used for select fill material provided it meets all the requirements of the equivalent off-site material.
 - 2. No on-site material shall be used without prior approval of the Engineer.
- F. Systematic Compaction - Compaction shall be done systematically, and no consideration shall be given to incidental coverage due to construction vehicle traffic.

3.4. PROTECTION

- A. Prior to terminating work for the day, the final layer of compacted fill, after compaction, shall be rolled with a smooth-wheel roller if necessary to eliminate ridges of soil left by tractors or equipment used for compaction or installing the material.
- B. As backfill progresses, the surface shall be graded so as to drain off during incidence of rain such that no ponding of water shall occur on the surface of the fill.
- C. The Contractor shall not place a layer of fill on snow, ice or soil that was permitted to freeze prior to compaction. These unsatisfactory materials shall be removed prior to fill placement.

END OF SECTION

SECTION 02507
TEMPORARY PAVING

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Temporary paving roads, streets, driveways, and walks.
- B. Schedule.
- C. Compaction.
- D. Maintenance.
- E. Tolerances.

1.2. RELATED SECTIONS

- A. Section 01025 - GENERAL CONTRACT BID ITEMS
- B. Section 01039 - COORDINATION AND MEETING
- C. Section 01300 - SUBMITTALS
- D. Section 02112 - PAVEMENT CUTTING
- E. Section 02228 - COMPACTION

1.3. REFERENCES

- A. New York Department of Transportation Standard Specifications, dated January 10, 2013.
- B. NYSDOT - Manual of Uniform Traffic Control Devices.

1.4. COORDINATION

- A. Coordinate field work under provisions of Section 01039, including maintenance of traffic, access to private driveways, and emergency vehicle access.

PART 2 PRODUCTS

2.1. TEMPORARY PAVING MATERIAL

- A. Temporary paving to consist of one of the following types:
 - 1. Type 3, Asphalt Concrete - From May through October, or when local bituminous plants are operating, the temporary paving shall be NYSDOT Type 3 asphalt concrete binder plant mix, 2 inch compacted thickness.

- a. When temporary pavements are to be maintained through a winter season, then a 4-inch compacted thickness shall be placed.
2. Type 2, Cold Mix Bituminous - From November through April, or when local bituminous plants are not operating, provide cold mix bituminous surfacing NYSDOT Specification Section 405, Type 2, placed to a 4-inch compacted thickness.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Verify that backfill and select special backfill has been compacted and graded in accordance with Section 02228.
- B. Verify that traffic controls are in place.

3.2. PREPARATION

- A. Install traffic control devices in accordance with the NYS Manual of Uniform Traffic Control Devices.
- B. Excavate, fill, grade and compact the special backfill to a smooth, stable condition prior to placing of the temporary paving.

3.3. INSTALLATION

- A. The temporary paving to match the slope, grade and alignment of the original pavement, driveway, and walk.
- B. The temporary paving to match the elevation of the adjacent surface and to continue the existing drainage pattern.
- C. Compact temporary paving to the Engineer's satisfaction with tandem rollers or equivalent and of sufficient size and number to compact the asphalt concrete while it is still hot and in a workable condition.
 1. Rolling shall continue until all roller marks and creases are removed.
 2. At the Engineer's discretion, confined area or small sections of pavement may be compacted by mechanical means.

3.4. TOLERANCES

- A. Flatness - Maximum variation of 3/4-inch measured by a 10-foot straight edge.
- B. Scheduled Compacted Thickness - Within 1/4-inch.

3.5. SCHEDULE

- A. Place temporary paving as directed by the Engineer over all trenches and excavations in streets, driveways, and walks as soon as the backfilling and compaction operations have been completed.

1. In any event, required surfaces shall be temporarily paved by each Friday afternoon prior to the weekend shutdown of construction activity.
2. Contractor shall replace painted traffic markings in accordance with local, county, or state specifications (depending on jurisdiction).

3.6. MAINTENANCE

- A. The temporary pavement to be maintained in a manner satisfactory to the Engineer, free from depressions, potholes and rough surface until its removal is required for the installation of permanent paving.
 1. Install additional material to maintain a satisfactory driving, walk, and driveways surface.
 2. If additional material is needed due to settling or constant use, Contractor shall replace or fill at no additional cost to the Owner.

END OF SECTION

SECTION 02510
HOT MIX ASPHALT PAVING

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Asphalt concrete paving and surface sealer; top course, binder, or base course.
- B. Driveways and parking areas.
- C. Road shoulders.
- D. Compaction.
- E. Asphalt curbs.
- F. Tolerances.
- G. Field quality control.

1.2. RELATED SECTIONS

- A. Section 01025 - GENERAL CONTRACT BID ITEMS
- B. Section 01039 - COORDINATION AND MEETINGS
- C. Section 01300 - SUBMITTALS
- D. Section 01550 - MAINTENANCE AND PROTECTION OF TRAFFIC
- E. Section 02112 - PAVEMENT CUTTING
- F. Section 02228 - COMPACTION
- G. Section 02507 - TEMPORARY PAVING

1.3. REFERENCES

- A. New York State Department of Transportation (NYSDOT) Standard Specifications, current version.
- B. USDOT - Manual of Uniform Traffic Control Devices.
- C. NYSDOT - Manual of Uniform Traffic Control Devices (Supplement).

1.4. PERFORMANCE REQUIREMENTS

- A. Paving and repaving accomplished under this contract shall meet the finished grades, elevations and profiles shown on the Drawings.

1. Where pavement replacement is being accomplished, match the sectional profiles of the existing pavement unless otherwise stated herein or shown on the Drawings.
- B. All thicknesses of pavement courses described herein or shown on the Drawings are after completion of compaction.

1.5. SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Submit certification of plant job mix formulas that have been approved by the NYSDOT.
- C. Traffic control plan in accordance with Section 01550 and the Manual of Uniform Traffic Control Devices (with the NYSDOT Supplement).
- D. Tack coat material.

1.6. QUALITY ASSURANCE

- A. Perform work in accordance with the NYSDOT Standard Specifications, as amended and revised to date and as they apply to the following:
 1. Materials and batch plant requirements.
 2. Construction procedures except as modified herein.
 3. Weather and seasonal limitations except as modified herein.
- B. Paving work shall be performed by a qualified paving contractor or subcontractor acceptable to the Owner and Engineer.
- C. Obtain asphalt concrete materials from same source throughout project.

1.7. ENVIRONMENTAL LIMITATIONS

- A. Weather and Seasonal Limitations - Asphalt concrete and bituminous surface treatments shall not be placed on wet surfaces or when it is raining or when conditions prevent the proper handling, compacting or finishing of the asphalt concrete or when the surface temperature is less than specified in the following table:

NOMINAL COMPACTED LIFT THICKNESS	SURFACE TEMPERATURE MINIMUM (NOTE 1)	SEASONAL LIMITS
3" or greater	40°F	None
Greater than 1" but less than 3"	45°F	Notes 2, 3, and 5
0.1" or less	50°F	Notes 2 and 3
Bituminous surface treatments (Note 3)	70°F or greater	

NOTES:

1. All temperatures shall be measured on the surfaces (lay glass thermometer on surface and read after temperature has stabilized) where the paving is to be placed and the controlling temperature shall be the average of three temperature readings taken at locations ±25 feet apart.
2. Surface treatments shall be placed during the period of May 1 up to and including the first Saturday after Labor Day.

3. The ambient temperature shall be not less than 50 degrees F in the shade and not more than 95 degrees F.
4. Bituminous paving mixtures for curbs, driveways, sidewalks, gutters and other incidental construction shall be placed on surfaces having a temperature of 45 degrees F or greater. Installation of these items is not subject to seasonal limitations.
5. When work is halted because of weather conditions, limited tonnage enroute to the project may be placed, if permitted, and the mixture is within the temperature requirements.

1.8. COORDINATION

- A. Coordinate field work under provision of Section 01039 including maintenance of traffic, access to private driveways, and emergency vehicle access.

1.9. SCHEDULING

- A. Schedule the paving operations such that all paving necessary to provide safe and adequate maintenance and protection of traffic or for protection of previously laid courses is completed within the weather and seasonal limitations.
 1. Such scheduling shall include expediting construction operations to permit paving before the seasonal limitations or by limiting the length of work to that which can be completed before the seasonal shut-down.
 2. The cost of scheduling and sequencing of work to conform to the seasonal limitations shall be reflected in the bid prices for the related contract items.

1.10. MAINTENANCE

- A. The Contractor shall maintain driving surfaces, free of ruts and potholes, for maintenance of traffic until temporary paving or permanent paving is installed.
 1. All temporary paving and pavement replacement shall be maintained in a safe, drivable condition until the pavement wearing course is installed.
 2. All subgrade, subbase and base courses shall also be maintained in their specific finish condition prior to placement of the next course.
- B. If the Contractor fails to complete the necessary paving operations prior to weather and seasonal limitations, all temporary materials and work which become necessary as a result of such failure, such as the lowering or shimming of castings and protrusions, drainage of the roadway, providing acceptable rideability, and other work needed for the adequate maintenance and protection of traffic until paving operations can be completed the following paving season, shall be at the Contractor's expense.
- C. For a period of one year after issuance of the Certificate of Substantial Completion, the Contractor shall promptly patch, maintain, repair, and/or replace any pavement that settles or becomes damaged due to settlement or defective materials or workmanship.
 1. Areas to be repaired shall be cut out in a square or rectangular shape to the depth matching the top course.
 2. The vertical face of asphalt to be painted with asphalt emulsion prior to placing the asphalt concrete.

3. If more than top course depth of 1-1/2 inch settlement has occurred, the pavement shall be removed to the subbase and subbase and/or binder and base course restored to proper grade before restoration of the wearing course.
4. The centerline finished grade, in any case, shall be as shown on the Contract Drawings.

PART 2 PRODUCTS

2.1. HOT MIX ASPHALT (HMA) PAVEMENTS

- A. Base Course - The pavement base course shall be constructed of the type described below and as shown on the Drawings. Base course material shall be installed to a width and depth as shown on the Drawings.
 1. Superpave - This base course shall be NYSDOT Item 402.378901, per NYSDOT Table 401-1. Final compacted thickness shall be as shown on the Drawings but not less than 3 inches. Temperature range from 225 to 300 degrees F.
- B. Binder Course - The pavement binder course shall be constructed of the type described below and as shown on the Drawings. Binder course material shall be laid to a width and depth shown on the Drawings. Temperature range 250 to 325 degrees F.
 1. Superpave - This binder course shall be NYSDOT Item 402.198901. Final compacted thickness shall be as shown on the Drawings, but not more than 2.5 inches.
- C. Pavement Wearing Course (Top Course) - Pavement wearing course construction shall be of the type described below and as shown on the Drawings. The wearing course shall be constructed to a width and depth as shown on the Drawings.
 1. Superpave - This wearing course shall be NYSDOT Item 402.098301. Final compacted thickness shall be as shown on the Drawings, but not more than 1.5-inch.
- D. Tack Coat
 1. NYSDOT - Tack coats of asphalt emulsions, Table 702 90, shall be furnished and applied in accordance with NYSDOT Specification Section "407 - Tack Coat." Prior to placing the next course, the asphalt shall be allowed to cure per manufacturer's recommendations.
- E. Painted Traffic Markings - Contractor shall replace all markings in accordance with state specifications.

2.2. ASPHALT CURB

- A. Materials shall conform to the requirements set forth in this section.

2.3. SOURCE QUALITY CONTROL

- A. Provide certification of state approved job mix formulas for types to be used on this project.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Permanent restoration of pavements shall not begin until 30 days after trench or structure backfill has been completed in accordance with the applicable specifications or until testing of the installed utility has been completed in accordance with the specifications (whichever is the longest period of time after completion of trench or structural backfill).
 - 1. Completion of backfill shall include compaction tests to ascertain compliance with degree of compaction required as described in Section 02228.
 - a. Verify base conditions under provisions of Section 01039.
 - b. Verify that compacted subgrade existing bituminous surface is dry and ready to support paving.
 - c. Verify gradients and elevations of base are correct.
- B. If painted traffic markings on the pavement are to be interrupted by the new pavement replacement, they are to be restored using an approved traffic paint.
- C. Driveway and Parking Areas
 - 1. Driveways and parking areas that are disturbed or damaged by the Contractor's operations shall be restored equal to a new condition.
 - 2. Driveway or parking area aprons which do not meet the elevation of the edge of new road pavement installed under this project shall be adjusted to meet the new pavement at a slope not to exceed 1 inch per foot with top course material of the new pavement, so that the apron conforms to the elevation of the road pavement at each location.
 - 3. New driveways or parking areas shall be constructed as described herein and as shown on the Drawings.
 - 4. Contractor shall completely replace driveway apron from trench to the road edge of pavement if trench is within 10 feet of road edge.
- D. Road shoulders to be constructed or reconstructed as described herein and as shown on the Drawings.
 - 1. Road shoulders that are disturbed or damaged by the Contractor's operations shall be restored equal to, or to conditions superior to that which existed prior to construction.
 - 2. Road shoulders that do not meet the elevation of the edge of new road pavement installed under this project shall be adjusted to meet the new pavement at a slope not to exceed 1-1/2 inches per foot. Paving materials shall match existing unless otherwise shown on the Drawings.
 - 3. New road shoulders shall be constructed as described herein and as shown on the Drawings.

3.2. PREPARATION

- A. Where project consists of reconstructing existing streets, lower valve boxes and existing manholes to subgrade level by removing frame and cover and brick masonry.

1. Cover valve boxes and manholes with steel plates and locate with measured ties.
 2. After constructing the subbases and pavement courses, and prior to placing the final top course, recover valve boxes and manholes and raise to finished grade.
- B. All existing and new manholes, frames and covers, valve boxes, curb boxes, etc., shall be raised or lowered to be 1/2 inch below the new pavement grade.
1. No manhole covers or valve box covers shall be covered with paving material, or be exposed in a depression in the pavement greater than 1/2 inch.
- C. Catch basin frames and grates shall be raised or lowered to be 1 inch below the new pavement finished grade.
- D. Pavement Cuts
1. Pavement cuts for final pavement replacement shall be made as described herein and in Section 02112.
 2. Pavement cuts shall be made parallel to the centerline of the trench, shall be located a minimum of 12 inches outside the backfilled trench on undisturbed subgrade and shall be in a straight line for minimum length of 100 feet between manholes or between those stations where changes in direction of the installed piping were made.
 3. Where a full street width overlay is to be installed the cutbacks may follow the backfilled trench alignment.
 4. Loose, torn, cut, marked up or damaged pavement outside the cutback areas shall be removed and replaced at the Contractor's expense and match the proposed permanent paving.
 5. Pavement cuts in driveways shall be cut back 12 inches and made in a straight alignment perpendicular or parallel to the driveway and for its full width.
 6. Pavement cuts in parking areas shall be cut back 12 inches and made in a straight alignment parallel to the centerline of trench.
- E. Preparation of Existing Surfaces
1. Prior to placing of hot mix asphalt, the existing pavement surfaces shall be cleaned including brooming, mechanical sweeping, and flushing with water such that no dust or foreign material remains on the existing surface and in accordance with NYSDOT Specification "402-3.05 Conditioning of Existing Surface" and "633 3.01 Cleaning Existing Pavement and/or Shoulders."
 2. After cleaning of surface, all unsealed or inadequately sealed cracks and joints shall be cleaned with compressed air and then sealed as required under NYSDOT Specification "633-3.02 Cleaning, Sealing and Filling Joints and Cracks."
 3. Prior to placing of hot mix asphalt, vertical faces of existing pavement, structures, curbs and gutters shall receive a tack coat as described in NYSDOT Specification "407 Tack Coat." Curbs and gutter faces to be sprayed only to the extent to be covered by the asphalt concrete.
- F. All new pavement where meeting existing pavement shall be butted up against a vertical face in the existing pavement.

1. This vertical face to be cut to the depth of the new pavement.
2. Where the new pavement is an overlay, the beginning and end of the top course shall be similarly butted against a vertical face.
3. The existing pavement shall be removed for a minimum length of 2 feet, as measured parallel to the direction of paving, or greater if required to eliminate any noticeable bump or to provide adequate drainage away from structures, and to the width of new pavement.

G. Removal of Existing Pavement

1. Where shown on the Contract Drawings, the Contractor shall remove a portion of an existing pavement including Portland cement concrete paving, hot mix asphalt pavement, or to remove an asphalt concrete overlay pavement from a Portland cement concrete pavement base course, to the limits and profile specified by grinding, milling, or planing methods.
2. This process shall yield a base upon which a final pavement course will be applied.
3. The Contractor shall employ equipment especially designed and manufactured for the grinding, milling or planing of pavements.
4. In general, grinding machines are designed for removing and profiling Portland cement concrete pavement surfaces while milling and planing machines are designed for the removing of asphalt concrete pavement surfaces.

H. The resulting ground, milled or planed surface shall be thoroughly cleaned and free from dust, loose pavement material or other material.

1. The surface shall be free from gouges, large cracks and unsound, soft or broken-up areas.
2. Gouges shall be made level and true by the use of a trueing and leveling course of asphalt concrete if allowed by the Engineer.
3. Cracks greater than 1/4-inch shall be cleaned and filled in accordance with Article 3.02.
4. Unsound, soft or broken-up areas shall be excavated and repaired.

3.3. PREPARATION - TACK COAT

- A. Apply tack coat in accordance with manufacturer's instructions.
- B. No traffic will be allowed on the freshly applied tack coat.

3.4. PREPARATION - RESET MANHOLE FRAMES

- A. Prior to placing wearing (top) course, make final adjustments of manhole frames, catch basin frames, valve boxes and any other utility structures located in the pavement in relation to finished grade.
 1. Manhole frames, valve boxes, etc. to set 1/2 inch below finished grade and parallel to finished crown.
 2. Catch basin frames to set 1 inch below finished grade and parallel to finished crown.

- a. Bevel slope of wearing course (for 6-inch width) around catch basin frame.

3.5. INSTALLATION

- A. Install Work in accordance with NYSDOT standards.
- B. Place asphalt within four hours of applying tack coat.
- C. Compact pavement by rolling. Do not displace or extrude pavement from position. Hand compact with vibratory pans and hand tamps in area inaccessible to rolling equipment.
- D. Develop rolling with consecutive passes to achieve even and smooth finish, without roller marks.

3.6. PLACING AND COMPACTING

- A. Placing mix in an appropriate ambient temperature and on a surface sufficiently warm to minimize the risk of excessive cooling before completion of rolling is of paramount importance. Holding the aggregate particles in place is solely the function of the film of asphalt. The asphalt cannot perform this function properly if the mix is too cool when rolled.
 1. A thin course compresses very little under the roller and, as it cools quickly, it must be rolled as soon as possible.
 2. The Contractor shall supply sufficient number of rollers to perform the required compaction while asphalt concrete is still hot and in a workable condition and coordinate speed of paver with rollers such that the degree of compaction required is obtained.
 3. A high degree of densification is not the goal with this type of mix -- the aim is firm seating and contact of the aggregate particles.
 4. One or two coverages (see Table 1) with a steel-wheeled roller weighing 8 to 10 tons is sufficient. Additional rolling may be excessive, causing a break in the bond of asphalt between aggregate particles, particularly after the mix has cooled.
 5. When overtaken by sudden storms, the Engineer may permit work to continue up to the amount which may be in transit from the plant at the time, provided the mixture is within temperature limits specified.
- B. Paving (NYSDOT) - All asphalt concrete shall be installed using self-powered units in accordance with the NYSDOT Specification "402-3.02 HMA Pavers and 402-3.06 Spreading and Finishing", except that the sixth paragraph of 402 3.06 beginning with the words "If there are less than 1,250 square meters . . ." is deleted and the following substituted:
 1. A self-powered paving unit shall be provided except where hand methods are permitted by the Engineer in small areas or areas inaccessible to a paving unit. For such areas, the mixture shall be dumped, spread, screened and compacted to give the required section and compaction thickness.
 2. Surface Treatment (NYSDOT) - Bituminous surface treatment to be constructed in accordance with NYSDOT "Section 410 Bituminous Surface Treatment - Single Course", Paragraphs 410-1 through 410-3.01 G.
- C. Placement of the surface course shall be carefully planned to assure that the longitudinal joints in the surface course will correspond with the edges of the proposed traffic lanes. They

shall not be located within the normal wheel path of vehicular traffic.

1. When paving adjoining lanes, the asphalt concrete shall be laid such that it uniformly overlaps the adjacent lane 2 to 3 inches. The thickness of the overlap material shall be approximately 1/4 the compacted thickness of the course, so as to result in a smooth and well compacted joint after rolling. The overlapped material shall be broomed or raked back onto the adjacent hot lane so that the roller operator can crowd the small excess into the hot side of the joint. If the overlap is excessive, the excess material shall be trimmed off so that the material along the joint is uniform. The coarse particles of aggregate in the overlap material shall be removed and wasted if deemed necessary by the Engineer.
 2. Traverse joints shall be staggered a minimum of 10 feet from adjacent lanes.
- D. Compaction - Asphalt concrete shall be compacted in accordance with NYSDOT Specification "402-3.07 Compaction and 402-3.09 Joints" using either option as follows:
1. Option A - Three-roller compaction train.
 2. Option B - Vibratory compaction.
- E. The required number of passes for either vibratory or static rollers, listed in Table 1, are minimum and may be increased by the Engineer. One pass shall be defined as one movement of the roller over any point of the pavement in either direction. Static roller passes shall continue until all ruts, ridges, roller marks or other irregularities are removed from the surface. The Engineer may alter the compaction procedures for small areas where the specified procedures are not practical.

TABLE 1
REQUIRED NUMBER OF PASSES (MINIMUM)

PAVEMENT COURSES	VIBRATORY ROLLER		STEEL-WHEEL TANDEM FINISH ROLLER
	VIBRATING PASSES (1)	STATIC PASSES (2)	STATIC PASSES
Base (open graded each lift)	4	2	5
Base (dense graded)	4	2	5
Binder (dense graded)	4	Not required	5
Top (dense graded all types)	2	Not required	2

NOTES:

- (1) The required number of vibrating passes shall be reduced by 1/2 for dual vibrating drum rollers when the drums are tandem and are both in the vibrating mode.
 - (2) The required number of static passes may be completed by the vibratory roller operating in the static mode.
- F. Unless otherwise directed by the Engineer, vibratory rollers having pneumatic drive wheels shall compact the longitudinal joint by using one of the pneumatic drive wheels to overlap the joint in two passes with the drum operating static. Unless otherwise directed by the Engineer, dual vibrating drum rollers shall compact the joint by overlapping the joints in two passes with both drums operating static.
- G. To prevent adhesion of the mixture to the drum(s), the drum(s) shall be kept properly moistened with water, or water mixed with small quantities of detergent or other Department approved materials. If required to prevent pneumatic tire pickup, the pneumatic drive wheels

may be coated with a fine mist spray of fuel oil or other similar material. In all instances, the surface of the pavement shall be protected from drippings of fuel oil or any other solvents used in pavings, compaction or cleaning operations.

- H. If the Engineer determines that unsatisfactory compaction is being obtained or damage to highway components and/or adjacent property is occurring using vibratory compaction equipment, the Contractor shall immediately cease using this equipment and proceed with the work in accordance with the conventional static compaction procedures at no additional cost.
- I. The Contractor should note that if he elects to use vibratory compaction equipment, he assumes full responsibility for the cost of repairing all damage that may occur to highway components and adjacent property or underground utilities.
- J. Areas inaccessible to rollers shall be compacted using vibratory pans, making a minimum of two passes on each course. Hand tamps shall be used for small areas not otherwise compacted.
- K. At the end of each work day, when placing top course material, the face of each paving lane shall be ended by the placing of a 2-inch x 4-inch or suitable sized board perpendicular to the pavement and shimmed with asphalt concrete to provide a driving surface such that the board and shim material can be easily removed and a vertical face retained for butting the start of the new pavement on the following work day.

3.7. DRIVEWAYS AND PARKING AREAS

- A. Paving materials, type of paving, depth of various courses, etc., shall be as shown on the Drawings.
 - 1. The driveways and parking areas shall be cut back 12 inches from outside disturbed or damaged areas as described above and in Section 02112.
 - 2. The minimum depth of subbase shall be 12 inches.
 - 3. The work shall include proper compaction of any necessary subbase, base course and paving courses, in accordance with Section 02228.
- B. Bituminous surfaces shall be restored with asphalt concrete matching existing, but in no case shall be less than 2 inches of Type 3 binder and 1 inch of Type 7 top course as specified in the applicable Articles of this section.
- C. Non-Bituminous Surfaces - Where shown on the Drawings, construct new driveways and parking areas or restore existing driveways and parking areas as follows:
 - 1. Gravel surfaces shall be restored per the Contract Drawings, matching existing, but in no case shall be less than 6 inches thick. The gravel shall be graded, shaped and compacted. Loose stones shall be removed.
 - 2. Crushed stone surfaces shall be restored matching existing stone, but in no case shall be less than 1 inch thickness of stone. Stone to be compacted with a roller.

3.8. ASPHALT CURB

- A. Bituminous curb shall be constructed by use of a self-propelled automatic curber or curb machine or a paver with curbing attachments.
- B. The automatic curber or machine shall meet the following requirements and shall be

approved prior to its use.

1. The automatic curber or machine shall be so constructed and so operated as to consolidate the mixture to produce a dense mass free of voids.
 2. The machine shall form the curb true to line and grade and to a uniform shape and texture.
 3. The Engineer may permit the construction of curb by means other than the automatic curber or machine, when short sections or sections with short radii are required, or for such other reasons as may seem to him to be warranted. The resulting curb shall conform in all respects to the curb produced by the use of the machine.
- C. When curb is to be placed on a bituminous pavement or other bases, they shall be thoroughly swept and cleaned using compressed air and/or other cleaning methods as necessary to provide a clean surface. The surface shall be thoroughly dried and, when directed by the Engineer, a tack coat of bituminous material as set forth in paragraph 2.02.D shall be applied. During application the Contractor shall prevent the spread of tack coat to areas outside of the area occupied by the curb.
- D. Backfilling, when required, shall be performed after the curb has reached ambient temperature and shall be performed promptly so as to afford support and protection. Backfilling shall be accomplished using such methods, equipment and compaction s directed to prevent damage to the curb and to obtain satisfactory results

3.9. SEAL COAT

- A. Apply seal coat to surface course in accordance New York State Department of Transportation standards.

3.10. TOLERANCES

- A. Surface Tolerance - The pavement surface shall be constructed to a 1/4-inch tolerance. If, in the opinion of the Engineer, the pavement surface is not being constructed or has not been constructed to this tolerance based upon visual observation or upon riding quality, he may test the surface with a 16-foot straight edge (furnished by the Contractor) or string line placed parallel to the centerline of the pavement and with a 10-foot straight edge or string line placed transversely to the centerline of the pavement on any portion of the pavement.
1. Variations exceeding 1/4-inch shall be satisfactorily corrected or the pavement relayed at no additional cost as ordered by the Engineer.
- B. Thickness Tolerance - The thickness indicated for each of the various courses of bituminous pavement is the nominal thickness. The pavement shall be so constructed that the final compacted thickness is as near to the nominal thickness as is practical, and within the tolerances specified below.
1. Material which is part of a trueing or leveling course or shim course will not be considered in pavement thickness determinations.
 2. A tolerance not to exceed 1/4-inch from the nominal thickness required for the course specified under one pay item will be acceptable where the required nominal thickness is 4 inches or less. A tolerance not to exceed 1/2-inch from the nominal thickness required for the course or courses specified under one pay item will be acceptable where the required nominal thickness is over 4 inches. In addition, the sum total thickness of all bituminous mixture courses shall not vary from the total of the nominal thickness indicated on the plans by more than 1/4 inch where the total

nominal thickness is 4 inches or less; or more than 1/2-inch where the total nominal thickness is over 4 inches but not more than 8 inches; and by not more than 5/8-inch where the total nominal thickness is more than 8 inches.

3.11. FIELD QUALITY CONTROL

- A. The required degree of compaction for wearing or top courses and shim course is a finished product having not more than 7 percent air voids.

3.12. PROTECTION

- A. Any pavement, constructed or reconstructed, which is subsequently damaged due to activity of work under this contract, shall be removed and replaced by the Contractor at no additional cost to the Owner.
- B. Protect pavement from vehicular traffic until compaction is completed.

END OF SECTION

SECTION 02661
WATER DISTRIBUTION PIPING

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Water main piping including fittings, accessories and materials.
- B. Connection of water mains to existing piping, hydrants, valves, and meters.
- C. Water services to serve domestic or fire protection.
- D. Installation.
- E. Installation schedule.

1.2. RELATED SECTIONS

- A. Section 01039 - COORDINATION AND MEETINGS
- B. Section 01300 - SUBMITTALS
- C. Section 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS
- D. Section 01700 - CONTRACT CLOSEOUT
- E. Section 02205 - PROTECTION OF EXISTING FACILITIES
- F. Section 02225 - TRENCHING
- G. Section 02228 - COMPACTION
- H. Section 02662 - WATER VALVES AND HYDRANTS
- I. Section 02674 - PRESSURE TESTING OF WATER DISTRIBUTION SYSTEMS
- J. Section 02675 - DISINFECTION OF WATER DISTRIBUTION SYSTEMS
- K. Section 03001 - CONCRETE

1.3. REFERENCES

- A. National Sanitation Foundation - Standard 61.
- B. U.S. Environmental Protection Agency - Safe Drinking Water Act.
- C. American National Standard Institute (ANSI)
- D. American Water Works Association (AWWA)

E. American Society for Testing Materials (ASTM)

1. Ductile Iron and Gray Iron Pipe

- a. ANSI A21.4/AWWA C104 - Cement-Mortar Lining for Ductile Iron and Gray Iron Pipe and Fittings for Water
- b. ANSI A21.4/AWWA C105 - Polyethylene Encasement for Ductile Iron Piping for Water and Other Liquids
- c. ANSI A21.10/AWWA C110 - Ductile Iron and Gray Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids
- d. ANSI A21.11/AWWA C111 - Rubber Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings
- e. ANSI A21.50/AWWA C150 - Thickness Design of Ductile Iron Pipes
- f. ANSI A21.51/AWWA C151 - Ductile Iron Pipe Centrifugally Cast in Metal Molds and Sand Lined Molds for Water and Other Liquids
- g. AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances
- h. ASTM A126- Gray Iron Castings for Valves, Flanges, and Pipe Fittings

2. Plastic Pipe and Fittings

- a. ANSI/AWWA C900 - Poly (Vinyl Chloride) (PVC) Pressure Pipe 4 inch through 12-inch for Water
- b. AWWA/C901 - Polyethylene (PE) Pressure Pipe and Tubing 1/2 inch through 3-inch for Water Service
- c. AWWA C902 - Polybutylene (PB) Pressure Pipe, Tubing and Fittings, 1/2-inch through 3-inch for Water
- d. ASTM D2464 - Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
- e. ASTM D2467 - Socket-Type Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
- f. ASTM D2564 - Solvents Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
- g. ASTM D2672 - Solvent Cement Joint Sockets for Belled PVC Pressure Pipe
- h. ASTM F477- Elastomeric Seals, (Gaskets) for Joining Plastic Pipe
- i. ASTM D1785 - Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
- j. ASTM D2581 - Polybutylene (PB) Plastics Molding and Extrusions Materials

- k. ASTM D3139 - Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
 - l. ASTM D3350 - Polyethylene Plastics Pipe and Fittings Materials
 - m. ASTM D2774 - Underground Installation of Thermoplastic Pressure Piping
 - n. ASTM D1784 - Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (PVC) Plastic Pipe Schedule 80
3. Copper Pipe and Tubing
- a. ASTM B88 - Copper Pipe Type K
 - b. AWWA C800 - Underground Service Line Valves and Fittings (with Type K Copper Pipe and Tubing)

1.4. SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data - Provide data describing conformance to ANSI/AWWA/ASTM codes, materials, sizes, class, dimensions, joint type, fittings, and pipe accessories.
- C. Manufacturer's Installation Instructions - Indicate special procedures required to install products specified.
- D. Results of shop tests, if required.
- E. Manufacturer's Certificate - Certify that products meet or exceed specified requirements.
- F. Manufacturer Certified - To certify lead-free components.

1.5. PROJECT RECORD DOCUMENTS

- A. Submit documents under provisions of Section 01700.
- B. Submit marked-up record plans, including record location if different from plan, variations in specified depth of more than ± 6 inches, record a minimum of two ties on all hydrants, bends, valves, and service connections.
- C. Identify and locate on record drawings the exposed unmapped utilities or services.
- D. Submit "Checklist for Water Service Connection" (found at the end of this section) for each installed service connection.

1.6. REGULATORY REQUIREMENTS

- A. Conform to requirements of regulatory agencies having jurisdiction over the work.
- B. Conform to permit requirements obtained by Owner and attached to these Specifications.

1.7. FIELD MEASUREMENTS

- A. Prior to start of construction, verify by field measurements that existing conditions and structures are as shown on Drawings, notify Engineer of specific discrepancies or potential interferences.
- B. Prior to start of construction where ordered, verify by exploratory excavations that existing underground utility locations and elevations are as shown on the Drawings or to confirm marked location and elevation of underground utilities by the organization identified in Section 02205.
- C. Where connections are to be made to existing pipes, confirm the type of material and the outside dimensions of pipes.

1.8. COORDINATION AND SHUTDOWNS

- A. Coordinate field work under provisions of Sections 01039 and 01500, including field engineering, maintenance of traffic, access to private driveways, and emergency vehicle access.
- B. Coordinate work with local utility companies (private and municipal), including the organization identified in Section 02205 for location of existing utilities and protection thereof.
- C. Coordinate shutdowns of existing systems with local authorities. Notify affected property owners and industries at least 24 hours prior to shutdown including duration of shutdown.

PART 2 PRODUCTS

2.1. DUCTILE IRON PIPE

- A. Pipe material, sizes, classes, etc. shall be furnished and installed as listed herein or as shown on the Drawings.
- B. For potable water applications, all linings and sealers shall conform to all applicable local, state, and federal health codes.
- C. Pipe shall be ANSI A21.51/AWWA C151 - Ductile iron pipe material, thickness design conforming to ANSI A21.50/AWWA C150, Class 52, rubber gasket push-on joint and fittings with mechanical or push-on joint conforming to ANSI 21.11/AWWA C111 and ANSI A21.10/AWWA C110.
- ~~D. Pipe for Rail Road crossing shall be ANSI A21.51/AWWA C151 - Ductile iron pipe material, thickness design conforming to ANSI A21.50/AWWA C150, Class 56, rubber gasket push-on joint and fittings with mechanical or push-on joint conforming to ANSI 21.11/AWWA C111 and ANSI A21.10/AWWA C110.~~
- E. Ductile iron pipe shall have cement mortar linings for potable water which shall conform to ANSI A21.4/AWWA C104 as follows:
 - 1. Double Thickness - Linings shall consist of cement mortar, centrifugally applied and shall not be less than 1/8 inch for 3 inches to 12 inches inclusive, 3/16 inch or 14 inches to 24 inches inclusive, and 1/4 inch for 30 inches to 54 inches inclusive. The inside shall be given a seal coat of asphalt material as described in ANSI A21.4/AWWA C104.

- F. Protective coatings for ductile iron pipe potable water pipes shall be an asphaltic coating approximately 1 mil thick and conform to requirements of ANSI 21.51/AWWA C151.
- G. All mechanical joint pipe and fittings shall be furnished with ductile iron retainer glands.
- H. Push-on joints shall provide the following maximum deflections:

PIPE SIZE	MAXIMUM DEFLECTION
4" through 12"	4°
14" and over	2.4°

- I. Manufacturers shall be:
 - 1. American Pipe Product.
 - 2. U.S. Pipe Product.
 - 3. Griffin Pipe Product.
 - 4. McWane Group (Clow or Atlantic States).
 - 5. Or equal.
- J. Where shown on the Drawings or described herein, provide ductile iron pipe with polyethylene sleeve encasement conforming to ANSI 21.5/AWWA C105.
 - 1. The encasement shall be a continuous 8-mil thick polyethylene sleeve.
 - 2. The joints in the sleeve shall be overlapped a minimum of 12 inches and taped with a 2-inch wide polyethylene adhesive tape wrapped a minimum of three times around the pipe to secure the tube of polyethylene to the pipe.
- K. Restrained joint pipe and fittings shall conform to ANSI 21.11/AWWA C111. Manufacturers shall be:
 - 1. American Pipe Product - Flex-Ring.
 - 2. U.S. Pipe Product - TR Flex.
 - 3. Griffin Pipe Product - SNAP-LOCK.
 - 4. McWane Group (Clow or Atlantic States).

2.2. PVC PIPE

- A. PVC Pipe - ANSI/AWWA C900 PVC pipe material conforming to ASTM D1784 minimum Class 150 psi (DR 18), inside nominal diameter as detailed on drawings, push-on joint conforming to ASTM D3139 with elastomeric gaskets conforming to ASTM F477.
- B. Fittings for use on PVC pressure pipe of 4-inch nominal inside diameter or greater shall be ductile iron with mechanical joints as described in ANSI 21.10/AWWA C110. The coatings and linings of the fittings shall be as specified for ductile iron pipe.

- C. Mechanical joints for fittings shall be supplied with rubber gasket joints in conformance with ANSI 21.11/AWWA C111.
- D. If required, supply flange joints for use in meter pits or valve manholes in conformance with ANSI 21.11/AWWA C11.

2.3. COPPER SERVICE PIPE

- A. Copper Pipe - ASTM B-88, Type K material for underground service, nominal inside diameter 1 inch, 1-1/4 inch, 1-1/2 inch, and 2 inches.
- B. All service piping and fittings shall be lead-free.
- C. Fitting shall be flare-type fittings in conformance with AWWA C800.
- D. Joints - Copper joints shall be thoroughly cleaned and the end of pipe uniformly flared by a suitable tool to the bevel of the fitting used. Wrenches shall be applied to the bodies of the fittings where the joint is being made and, in no case to a joint previously made.

2.4. PIPE ACCESSORIES

- A. Fittings - Same materials, class, coatings and linings as pipe unless under Article 2.01 it was specifically described otherwise. Fittings molded or formed to suit pipe size and end design and in required tee, bends, elbow, couplings, adapters, and other configurations.
- B. Where piping is to be installed, above ground or within structures provide adequate supports and bracing by means of hangers, brackets or concrete supports as may be required by the location.
- C. Hangers and supports shall be as manufactured by Anvil International, Providence, RI; Basic Engineering (BE), Pittsburgh, PA; or equal. They shall have stainless steel support rods, stainless steel mounting hardware, fasteners and beam clamps.
- D. Pipe openings in walls shall be precast or core drilled and completely sealed against water seepage with a mechanical type seal consisting of interlocking synthetic rubber links and nuts with pressure plates wider at ends, the seal shall be link seal manufactured by Thunderline Corporation, Wayne MI, or equal.

2.5. IDENTIFICATION

- A. Each pipe length and fitting shall be clearly marked with:
 - 1. Manufacturer's name and trademark.
 - 2. Nominal pipe size and class.
 - 3. Material designation.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Contractor shall verify all existing conditions.

- B. The drawings and specifications may contain information relating to conditions below the ground surface at the site of proposed work, but such information is furnished without guarantee as to it being complete or correct. The Contractor shall assume all risk and responsibilities and shall complete the work in whatever manner and under whatever conditions he may encounter or create without extra cost to the Owner. Location of existing underground facilities at or contiguous to the site is based upon information and data furnished to the Engineer by owners of such underground facilities or others, and Owner and Engineer do not assume responsibility for the accuracy or completeness thereof. The Contractor shall perform exploratory excavations in advance of this work to verify the location, depth, size, and material of existing utilities which may interfere with the work to be performed under this contract. All damage to existing utilities shall be the Contractor's cost to repair or replace.
- C. Verify that trench cut, excavated base and pipe bedding are ready to receive pipe and that excavations and pipe bedding dimensions and elevations are as shown on Drawings.
- D. All pipe or fittings which have been damaged in transit or which are obviously deformed or refinished in any way shall be rejected, marked, and removed from the site of the work. Any pipe or fitting which the Engineer suspects is improper for the job shall be temporarily rejected, marked, and set aside for subsequent investigation to determine its conformity with the specifications.
- E. All pipe fittings and specials shall be carefully inspected in the field before lowering into the trench. Cracked, broken, warped, out-of-round, damaged pipe joints including damaged pipe lining or coatings or specials, as determined by the Engineer, shall be culled out and not installed. Such rejected pipe shall be clearly tagged in such manner as not to deface or damage it, and the pipe shall then be removed from the job site by the Contractor at his own expense.

3.2. PREPARATION

- A. The Contractor shall have on the job site with each pipe laying crew, all the proper tools, gauges, pipe cutters, lubricants, etc. to handle, cut and join the pipe.
- B. Flat-bottom trenches of required width shall be excavated to the necessary depth as required and maintained in accordance with Section 02225.
- C. Prior to installing the pipe foundation material, trenches shall have all water removed and all work performed in a dry trench.
- D. All pipes, fittings and specials which are to be installed in the open trench excavation shall be properly bedded in a uniformly supported on pipe foundations of the type specified in Section 02225 and shown on the Drawings. In particular, stones 2 inches and larger shall be removed from the bearing surface of the pipe foundation.
- E. Pipe foundation bedding material shall be spread in maximum 8-inch layers and each layer shall be compacted up to the spring line of the pipe.
- F. Compaction methods include hand tamping with T-bars, flat heads, shovel slicing as well as mechanical compactors.
- G. The Contractor shall perform his bedding operations with care to maintain line and grades.
- H. Suitable holes or depressions shall be provided in the pipe bedding to permit adequate bedding of bells, couplings, or similar pipe projections.

3.3. LINES AND GRADES

- A. The Contractor shall furnish all labor, materials, surveying instruments, and tools to establish and maintain all lines and grades. The Contractor shall have personnel on duty or on standby call, at all times, who are qualified to check line and grade of water mains as they are installed.
- B. Other control lines necessary for locating the work are shown on the Drawings.
- C. During construction, the Contractor shall provide the Engineer, at his request, all reasonable and necessary materials, opportunities, and assistance for setting stakes and making measurements, including the furnishing of one or two rodmen or chainmen as needed at intermittent times.
- D. The Contractor shall carefully preserve bench marks, reference points and stakes established by the Engineer or Owner, and in case of willful or careless destruction by his own operations he will be charged with the resulting expense to reestablish such destroyed control data and shall be responsible for any mistakes or delay that may be caused by the unnecessary loss or disturbance of such control data.
- E. The Contractor may use laser equipment to assist in setting the pipe provided he can demonstrate satisfactory skill in its use.
- F. The use of string levels, hand levels, carpenter's levels or other relatively crude devices for transferring grade or setting pipe are not to be permitted.

3.4. TOLERANCES

- A. Pipes shall be laid to the lines and grades shown on the Drawings.
- B. Minimum depth of cover shall be maintained as shown on the Drawings or as described herein.

3.5. INSTALLATION

- A. Installation of ductile iron pipe or plastic pipe to be in conformance with AWWA C600 or ASTM D2774, respectively, except as modified in this section or referenced sections or as shown on the Drawings.
- B. The Contractor shall furnish slings, straps and/or approved devices to provide satisfactory support of the pipe when it is lifted. Transportation from storage areas to the trench shall be restricted to operations which can cause no damaged to the pipe or lining or castings.
- C. The pipe shall not be dropped from trucks onto the ground or into the trench.
- D. Each pipe section shall be placed into position in the trench on the pipe bedding in such manner and by such means required to cause no injury to the pipe, persons or to any property.
- E. The method of laying and jointing the pipe shall be in accordance with the recommendations of the manufacturer and as approved by the Engineer. Each pipe shall be aligned with that already in place, forced home completely with horizontal axial movement and held securely in position. The bell of each pipe length to be laid in the same direction the installation is proceeding.

- F. At the joints, enough depth and width shall be provided to permit the pipe layer to reach entirely around the pipe so that the joints may be made in accordance with the manufacturer's recommendations. Mechanical type joints shall be tightened within the AWWA recommended torque range.
- G. Pipes, fittings, and specials shall be firmly bedded in the pipe foundation and shall have full bearing throughout their entire length, which shall be accomplished by combination of shaping the bedding and adequately compacting the pipe bedding and backfill under and around the pipe to the spring line of the pipe. The remaining backfill placed in 12 inch lifts to 1-foot above the crown of the pipe in accordance with Table 1 of Section 02228. The remaining backfill installed in accordance with Sections 02225 and 02228.
- H. When laid in tunnels, pipes shall be blocked in such a manner as to take the weight off the bells. Pipe laid in normal trench excavation shall not be laid on wood blocking.
- I. Backfill material within 12 inches of the pipe shall be free of stones greater than 2 inches in any dimension.
- J. Unless otherwise shown on the Drawings, the minimum total finished cover over the top of the pipe barrel of all pressure pipe shall be 4.5 feet.
- K. Refer to Section 02225 for other installation guidelines and requirements.
- L. To deflect a pipe joint, first join the pipe in the proper manner and then deflect the pipe within the allowable deflection recommended by the manufacturer.
- M. Installation of polyethylene sleeves to be performed in accordance with the manufacturer's instructions and ANSI A21.4/AWWA C105.
- N. Install magnetic locating tape, trace wire, minimum 2 inches wide with the words "Water Line Below" along the centerline of the installed water main for the entire length at a maximum depth of 2 feet 0 inches below finished grade.
- O. For each pipe entering or leaving a manhole or underground structure, at least one pipe joint shall be located within 4 feet of the outside face of the wall, and preferably at the 2-foot point.
- P. For ductile iron pipe installations, install three bronze wedges in each joint of pipe, fittings and specials.

3.6. CONNECTIONS TO EXISTING PIPES

- A. Connections to existing water mains shall be by dry connection by inserting a tee with coupling or wet connection by tapping sleeve and valve and where shown on the Drawings.
- B. Contractor to verify outside dimension of existing water main.
- C. Couplings to be ductile iron fittings, Smith Blair Model 441, or equal with stainless steel bolts and nuts. The couplings shall receive two coats of coal tar epoxy paint on all exterior surfaces prior to installation.

3.7. BRACING AND BLOCKING

- A. All bends, tees, crosses, plugs, etc., shall be braced and blocked with wood and then anchored with concrete thrust blocks so that there will be no movement of the pipe in the joints due to the internal or external pressures.

- B. The concrete shall be placed around the fittings and completely fill the space between the fittings and walls of the trench, from 6 inches below the fittings of pipe to 12 inches above the fittings and in accordance with the dimensions and details shown on the Drawings.
- C. The anchor concrete shall be so placed that the bell and spigot joints or other joints may be tightened, if necessary.
- D. Steel ties to be used only where shown on the Drawings.
- E. Prior to installation of the concrete anchor, the Contractor shall wrap all fittings with a minimum of 8-mil thick polyethylene.
- F. Refer to details shown on the Drawings.
- G. Cast-in-place concrete used in constructing concrete thrust blocks shall conform to requirements specified in Section 03001.
- H. Measuring, mixing, transporting and placing of concrete shall conform to American Concrete Institute (ACI) Publication 304.
- I. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- J. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.8. TEMPORARY PLUGGING

- A. At all times when pipe laying is not actually in progress, the open ends of the pipes shall be closed temporarily with pipe plugs or by other means such that there is no possibility of any water or foreign material entering the line. If water is in the trench when work is resumed, the plugs shall not be removed until the water has been removed and work can proceed in a dry stable trench.

3.9. CLEANING PIPELINE

- A. At the conclusion of the work, the Contractor shall thoroughly clean all new pipes by flushing with water or other means to remove all dirt, stones, pieces of wood, etc., which may have entered during the construction period.
 - 1. Pipes shall be flushed at a minimum rate of 2.5 feet per second for a suitable duration.
 - 2. If, after this cleaning, any obstructions remain, they shall be corrected to the satisfaction of the Engineer.
- B. Where required, the Contractor shall use mechanical methods to clean pipes when flushing does not remove all obstructions or material.

3.10. PRESSURE TESTING AND FLUSHING

- A. Pressure testing and flushing of the water mains shall be performed in accordance with Section 02674.

- B. Any section of pipe that fails the pressure test shall be dug up and replaced or permanently repaired as approved by the Engineer. All repairs and/or replacements shall be the Contractor's cost. The replaced or repaired section shall then be retested.

3.11. DISINFECTION

- A. Disinfection of water mains shall be performed in accordance with Section 02675.

3.12. ENCASEMENT

- A. Where shown on the Drawings, pipes shall be encased in concrete; details and requirements for encasement of pipes are described in Section 02225 and shown on the Drawings.
- B. Requirements for encasement of pipes 10 inches and smaller, shown under a base slab, are described in Section 02225.
- C. Where shown on the Drawings, pipes shall be encased in a polyethylene sleeve.
 - 1. Damage to wrapping during pipe laying or backfilling operations shall be repaired with additional sleeve material and adhesive tape.

3.13. SERVICE CONNECTIONS

- A. When shown on the Contract Drawings, or ordered by the Engineer, water services shall be furnished and installed, and to the extent shown or ordered by the Engineer.
- B. The Contractor shall verify location of each new water service with each property owner as follows. The Contractor shall coordinate with each property owner of the planned location of the water service and connection to the existing curb stop at least two weeks before installation. At that time, the Contractor shall also furnish to each property owner a stake with a card attached to read as follows:

IMPORTANT NOTICE

A water main will be constructed on your street shortly. A water service will be installed from the water main to the edge of the street right-of-way or permanent easement to serve your property or house as applicable.

Please drive this stake with attached card in the area where you want the new water service to be located. Consult your plumber should you require advice on this location.

While all service connections must be installed by the wet tap method after pipe testing and disinfection, the homeowner must designate a service location prior to pipe installation to permit proper scheduling.

Please be patient with the construction, as your street and property will be restored after the installation of the water main system

Thank you for your cooperation.

(Name, address and telephone number of Contractor)

- C. If curb stop is not located within the road right-of-way, Contractor, property owner, Town, and Engineer shall coordinate new curb stop location.

- D. Corporations shall be installed in the "run" of the water main at the required locations or, if the pipe is required to be tapped to receive special saddles, such fittings shall be located at the required locations and installed as specified, and in a manner satisfactory to the Engineer. The requirements for proper pipe foundation, bedding, joint assembly, etc., shall be observed when installing the water services. All corporation installations shall be "wet" taps.
- E. After installation, water services shall be thoroughly flushed and shall not be backfilled until the installation has been observed and approved by the Engineer and their location has been measured and recorded by the Contractor on a standard form (see the form at the end of this section) provided by the Engineer, and such record shall then be transmitted to the Engineer with the record drawings.

3.14. VALVES AND HYDRANTS

- A. Valves and hydrants to be installed on this project are specified in Section 02662.
- B. Valve and hydrant details for connection to the water main are shown on the Drawings.
- C. Refer to Drawings for locations of valves and hydrants to be installed on this project.

3.15. QUANTITY FACTORS

- A. The tables shown on the Contract Drawings shall be used as the basis for computing volumes of excavation below subgrade, trench lining material, special pipe foundation materials, and special backfill materials when such volumes constitute the basis for payment to the Contractor, as established elsewhere in the Contract Documents. No deviations from the factors shown shall be allowed because of variations between the several pipe materials and classes.
- B. No special computations of quantities shall be made for structures such as meter manholes, valve pits, etc., which may occur in the various pipelines but the quantities for payment noted above, where applicable to such structures, shall be computed by assuming that the appurtenant pipeline continues uninterrupted through such structure; such as from center-to-center of manholes.

3.16. INSTALLATION SCHEDULE

Road	From Station	To Station	Notes

Job _____ No.

Contract _____ No.

Contractor: _____

CHECKLIST FOR WATER SERVICE CONNECTION

(To Be Completed by Contractor)

Date: _____

Street: _____

House No. _____

Name: _____

Describe Location if No House Number:

Item	Yes	No	Location Sketch
1. Connection to Water Main:			
(a) Tapped directly into pipe barrel			
(b) Saddle			
2. Service Pipe Installed:			
(a) Using copper pipe			
(b) Curb stop installed			
(c) Curb box installed			
3. Connection to House Line:			
4. Diameter of Service Connection:			
5. Diameter of Water Main:			
6. Depth of Curb Stop:			
7. Station of Tap:			

CHECKED AND APPROVED

Contractor's Representative

INSTRUCTIONS:

Complete every space accurately.
Show house, street, and water main.
Show two permanent radius ties to curb stop.
Show North arrow.
Show diameter of main.
Copies for Owner, field and office.

END OF SECTION

SECTION 02662
WATER VALVES AND HYDRANTS

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Furnishing the several types of valves, stops, and backflow preventers.
- B. Hydrants.
- C. Valve operators.
- D. Valve boxes.
- E. Sampling stations.
- F. Installation.
- G. Testing and disinfection.

1.2. RELATED SECTIONS

- A. Section 01025 - GENERAL CONTRACT BID ITEMS
- B. Section 01039 - COORDINATION AND MEETINGS
- C. Section 01300 - SUBMITTALS
- D. Section 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS
- E. Section 01700 - CONTRACT CLOSEOUT
- F. Section 02225 - TRENCHING
- G. Section 02661 - WATER DISTRIBUTION PIPING
- H. Section 02674 - PRESSURE TESTING OF WATER DISTRIBUTION SYSTEMS
- I. Section 02675 - DISINFECTION OF WATER DISTRIBUTION SYSTEM

1.3. REFERENCES

- A. ANSI/AWWA C500 - Gate Valves for Water and Sewerage Systems
- B. ANSI/AWWA C502 - Dry Barrel Fire Hydrants
- C. ANSI/AWWA C504 - Rubber Seated Butterfly
- D. ANSI/AWWA C506 - Backflow Prevention Devices - Reduced Pressure Principle and Double Check Valve Types
- E. ANSI/AWWA C507 - Ball Valves 6 inches through 48 inches

- F. ANSI/AWWA C508 - Swing Check Valves for Waterworks Service 2 inches through 24 inches NPS
- G. ANSI/AWWA C509 - Resilient-Seated Gate Valves for Water and Sewerage Systems
- H. ANSI/AWWA C540 - Power-Activating Device for Valves and Sluice Gates
- I. ANSI/AWWA C550 - Protective Interior Coatings for Valves and Hydrants
- J. ASTM A126 - Gray Iron Castings
- K. ASTM A48 - Gray Iron Castings for Valves, Flanges and Pipe Fittings

1.4. DESIGN REQUIREMENTS

- A. The design working pressure shall be 200 psig for valves 12 inches NPS in diameter and smaller.
- B. The design working pressure shall be 150 psig for valves 16 inches NPS in diameter and larger.
- C. Valves shall be designed for normal cold water use.
- D. Gate valves shall be designed to be leak-tight with full pressure on either face with no pressure on the opposite face.
- E. Resilient seated gate valves shall be designed to be leak-tight with full pressure on either face with no pressure on the opposite face.
- F. Hydrants shall be designed for a 300 psig test pressure and 150 psig working pressure.
- G. All service line valves, corporations, and curb stops shall be lead-free.

1.5. SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Submit shop drawings of types of valves, hydrants and appurtenances proposed for the project including conformance to ANSI/AWWA codes and related details for field assembly, operations and maintenance.
- C. Manufacturer's Installation Instructions - Indicate special procedures required to install Products specified.
- D. Results of shop tests, if required.
- E. Manufacturer's Certificate - Certify that products meet or exceed specified requirements.

1.6. PROJECT RECORD DOCUMENTS

- A. Submit documents under provisions of Section 01700.
- B. Record location of valves and hydrants with a minimum of two ties to permanent objects.

- C. Record Drawings - Provide the pipe sizes and horizontal and vertical location of all valve boxes, ARVs, curb boxes, meter pits, fire hydrants, blowoffs, corporations, fittings, and other appurtenances. The information will be provided digitally and consistent with the plan datum and control as shown on the Drawings. The Contractor will employ the services of a registered professional surveyor licensed in the State of New York to provide the information.

1.7. REGULATORY REQUIREMENTS

- A. Conform to applicable code for materials and installation of the work of this section.
- B. All sheeting and bracing including the use of mobile shields shall conform to Public Law 91-596 (Williams Steiger Act). Occupational Safety and Health Administration Act (OSHA) of 1970 and its amendments and regulations or to the New York State Industrial Code Rule 23, entitled, "Protection in Construction, Demolition and Excavation Operations" as issued by New York State Department of Labor, Board of Standards and Appeals, whichever is the most stringent.
- C. Conform to New York State Industrial Code Rule 53, entitled "Construction, Excavation and Demolition Operations at or Near Underground Facilities" as issued by the State of New York Department of Labor, Board of Standards and Appeals.
- D. Conform to requirements of permits obtained by Owner.

1.8. FIELD MEASUREMENTS

- A. Verify by field measurements and exploratory excavations that existing pipe outside diameter (for tapping sleeve and valve installations) and facilities locations and elevations are as indicated and/or as shown on Drawings. Notify Engineer of specific differences.

1.9. COORDINATION

- A. Coordinate work under provisions of Sections 01039 and 01500.

PART 2 PRODUCTS

2.1. MATERIALS

- A. Valve size, type of valve, joint type, class, lining, coatings shall be installed as listed herein or as shown on Drawings.
- B. Valves shall be of standard manufacturer and of highest quality, both as to material and workmanship, conforming to the latest edition of AWWA standards specified.
- C. All valves and hydrants shall have the manufacturer's name monogrammed or initialed by the manufacturer thereon and shall be identified by catalog numbers.
- D. All valves shall be provided with hub, spigot, mechanical joint, flange or screwed ends as described herein or shown on the drawings.
- E. Valves 2 inches in nominal diameter and smaller shall be all brass or bronze.
- F. Valves over 2 inches in nominal diameter shall be iron bodied, fully brass or bronze mounted.
- G. All surface forming joints or bearing surfaces shall be machined to a perfect fit.

- H. All disc and seat rings shall be carefully and thoroughly secured in place with the iron castings machined where the rings are bare and the backs of the rings machined all over.
- I. After the rings have been fastened securely in place, the front shall be machined all over to a perfectly true and smooth bearing surface.
- J. All valves with non-rising stems shall have valve position indicators.
- K. Valves shall open counterclockwise (left) unless otherwise specified.

2.2. RESILIENT SEATED GATE VALVES

- A. All underground gate valves shall be non-rising stems, 2 inch operating nuts, O-ring seal and shall open counterclockwise (left).
 - 1. Underground gate valves shall be of the iron body, bronze mounted type conforming to AWWA Standard C509.
 - 2. Mechanical joint type designed for underground use at 150 psi.
 - 3. Underground gate valves shall be Kennedy, Mueller or equal.
- B. All resilient seated gate valves shall provide a full pipe opening when fully opened.

2.3. BACKFLOW PREVENTER

- A. Reduced pressure zone backflow preventers shall be supplied where shown on the Contract Drawings.
- B. The backflow preventers shall consist of two spring-loaded check valves and a spring-loaded diaphragm-actuated, differential pressure relief valve located in the zone between the check valves.
- C. The unit shall include properly located test cocks and operation shall be completely automatic. The total headloss shall not exceed 10 psi at AWWA rated flow.
- D. All parts shall be manufactured from corrosion-resistant materials.
- E. A continuous discharge from the relief valve opening shall provide a visual inspection of need of repair.
- F. Manufacturers - Reduced pressure zone backflow preventers shall be listed on approved list of New York State Department of Health Technical Reference PWS-14 latest edition.

2.4. CORPORATION STOPS

- A. Corporation stops shall be lead free and of brass or bronze construction and shall be installed by the wet method, connecting service line to water mains, with water main at or near operating pressure when corporation stops are installed.
- B. Corporation stops shall be installed by experienced tradesmen using the proper tools especially designed for a wet-tap connection.

- C. Corporation stops shall be installed in complete accordance with the pipe manufacturer's recommendations for tapping and installing corporation stops.
- D. Saddles shall be used where recommended by the pipe manufacturer or as ordered by the Engineer, and such saddles shall be approved for use with the pipe by the pipe manufacturer. Threads of service saddle shall be compatible with the corporation stop specified. Saddles shall be of double strap design. Contractor shall verify diameter and pipe material ahead of time. Saddles shall be made of either brass or bronze and shall be as manufactured by Mueller Company, Ford Meter Box Company, or equal. All saddles shall be field wrapped with a polyethylene sheet.
- E. Where saddles are used, or for other reasons the main cannot be tapped wet, the Engineer may approve visual inspection of such connections after they have been pressurized.
- F. Buried corporation stops shall be Model H-15000 as manufactured by Mueller Company, or Model F-600 as manufactured by Ford Meter Box Company, or equal. Corporation stops located within pits or vaults shall be Model H-10045 or H-9992 with I.P. outlet as manufactured by Mueller Company, or Model F800 or F1600 with I.P. outlet as manufactured by Ford Meter Box Company, or equal.

2.5. CURB STOPS

- A. Curb stops shall be of brass or bronze construction and two rubberized O-ring seals to provide pressure-tight seal. Curb stops shall be Figure H-15204 as manufactured by Mueller- Oriseal, B22 as manufactured by Ford Meter Box Company, Hayes, Nuseal, or equal.
- B. Curb boxes shall be 2-1/2-inch shaft size two-piece screw type. They shall be adjustable from 48-inch to 72-inch. Curb boxes shall be constructed of cast iron and thoroughly coated with two coats of asphaltum varnish.
- C. Curb box top section shall include a water cover which shall be of the "old style" with the word "Water" cast into it and shall include a brass pentagon screw.
- D. Curb box rods shall be supplied with a hole in the "U" portion for the insertion of a brass pin. Pins shall be supplied and shall be made of brass.
- E. Curb boxes shall be as manufactured by Mueller or equal.

2.6. WRENCH OPERATOR

- A. Wrench for wrench-operated valves located above ground shall be of bronze or cast iron, and shall be of suitable size and length to facilitate an effortless operation. One such wrench shall be provided for each valve on the project requiring wrench operation.
- B. Wrenches for wrench-operated valves located underground shall be of tee handle type and shall be of suitable length to enable operation of all such valves on the project. Two wrenches compatible with each type of operating nut on all valves used throughout the project shall be provided.

2.7. VALVE BOXES

- A. Valve boxes shall be provided for all buried valves unless they are housed in valve chambers.

- B. Valve boxes shall be made of good quality cast iron and shall be of the sectional adjustable type. The long section shall be a minimum of 5 inches in inside diameter and fit around the stuffing box of the valve; or over the valve operator, if a two-section box is used; or to fit a circular or oval-base section if a three-section box is used.
- C. The upper section shall be arranged to screw on over the adjoining long section and shall also be full diameter. Screw-type valve boxes shall be used unless otherwise specified. Valve boxes shall be provided with cast iron lids or covers.
- D. Lids or covers shall be marked for the service for which the valve is used by casting words such as "WATER" for potable water system, "GAS", etc. An arrow shall be provided on the cover to indicate the direction in which the valve is turned to open; this arrow shall be labeled with the word "OPEN".
- E. The overall length of each valve box shall be sufficient to permit the top of the box to be set flush with the established finished grade. In asphalt concrete pavements, the top of the box to be set 1/2-inch below finished grade. Asphalt concrete to be compacted 12 inches wide around the upper section for a depth of 12 inches below finished grade.
- F. Valve boxes shall be set truly vertical and fully supported until sufficient backfill has been placed and compacted to ensure vertical alignment of the box.

2.8. VALVE DIRECTORY

- A. A valve directory shall be provided listing all valve numbers, the valve function, and location. The directory shall be prepared and delivered to the Owner after approval by the Engineer in a digital spreadsheet able to be opened with Microsoft Excel.
 - 1. Buried valves shall be included in valve directory with a description of their functions and locations. Coordinates (Northings and Eastings) number of turns open/close and model number.

2.9. ~~HYDRANTS~~

- ~~A. All hydrants shall be of the compression or gate type conforming to the latest specifications of the ANSI/AWWA C502, and shall be of a make that has been adopted by the Owner as a standard.~~
- ~~B. Hydrants shall be of heavy, anti-freeze compression action type with positive automatic type drain.~~
- ~~C. All hydrants shall breakaway at ground level upon severe impact without flooding the area.~~
- ~~D. Hydrants shall be supplied with 6-inch mechanical joint inlet connection.~~
- ~~E. Hydrants shall have a minimum 5-1/4-inch diameter valve opening. They shall be equipped with two 2-1/2-inch hose nozzles and one 4-1/2-inch steamer nozzle. The pipe threads shall be National Standard Thread.~~
- ~~F. Operating nuts shall be 1-1/2-inch 5-sided.~~
- ~~G. Hydrant barrels shall be painted in accordance with the City of Cortland standards.~~
- ~~H. Hydrants designated with plugged drain hole shall be factory yellow with a red cap.~~
- ~~I. Caps shall be furnished with non-kinking chains.~~

- ~~J. Hydrants shall open counter-clockwise.~~
- ~~K. Hydrants shall be designed for 300-lb. test pressure and 150-lb. working pressure.~~
- ~~L. Hydrants shall be Kennedy K81-D in accordance with the Town of Essex standards.~~

2.10. TAPPING SLEEVES AND VALVES

- A. Tapping sleeves and valves shall be provided where shown on the Contract Drawings.
- B. Tapping sleeves shall be compatible with the pipe encountered so that a watertight connection will be made.
- C. The sleeve shall be adequate to provide reinforcement of the pipe being tapped and protect this pipe against all strains resulting from either tapping the pipe or connecting to the pipe.
- D. Tapping sleeves and tapping valves for this project shall be manufactured by Mueller Company or equal.
- E. The tapping contractor shall have a minimum of five years' experience in performing taps.
- F. After the sleeve has been installed, but prior to making the tap, the sleeve shall be subjected to a hydrostatic test equal to the maximum line pressure. There shall be no observed leakage from the sleeve.

2.11. SAMPLING STATIONS

- A. Sampling stations shall be with a 1-inch FIP inlet and a 3/4-inch hose or unthreaded nozzle.
- B. All stations shall be enclosed in a lockable, non-removable, aluminum-cast housing. When opened, the station shall require no key for operation, and the water will flow in an all-brass waterway.
- C. All working parts will also be of brass and be removable from above ground with no digging. A copper vent tube will enable each station to be pumped free of standing water to prevent freezing and to minimize bacteria growth.
- D. The exterior piping will be galvanized.
- E. Sampling Stations shall be model Eclipse 88, as manufactured by Kupferle Foundry, St. Louis, MO.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Verify that trench cut, excavated base and valve bedding is ready to receive work and valve bedding dimensions and elevations are as indicated on Drawings.
- B. All valves, hydrants, stops and appurtenances shall be carefully inspected in the field before lowering into the trench. Cracked, broken, warped, out-of-round, damaged joints, including damaged linings or coatings, or otherwise defective valves, hydrants and stops, as determined by the Engineer, shall be culled out and not installed. Such rejected

material shall be clearly tagged in such manner as not to deface or damage it, and the material shall then be removed from the job site by the Contractor at his own expense.

- C. For tapping sleeve and valve connections, the Contractor, prior to making any connections, shall verify the material and outside diameter of the existing water main.
- D. The Contractor shall have on the job site all the proper tools, gauges, pipe cutters, lubricants, etc., to properly install valves, hydrants, etc.

3.2. PREPARATION

- A. Prior to installing the foundation, trenches shall have all water moved and all work performed in a dry stable trench.
- B. All valves, hydrants, etc. which are to be installed in the open trench excavation shall be properly bedded in, and uniformly supported on pipe foundations of the various types specified in Section 02225 and shown on the Contract Drawings.
- C. Flat-bottom trenches of required width shall be excavated to the necessary depth as required and maintained in accordance with Section 02225.
- D. Bedding material shall be spread in maximum of 8-inch layers for the pipe foundation and each layer shall be compacted until the required total depth of bedding has been built up.
- E. Suitable holes or depressions shall be provided in the bedding to permit adequate bedding of bells, couplings or similar joint projections.
- F. Compaction methods include hand tamping with T-bars, flat heads, shovel slicing, as well as mechanical compactors.
- G. The Contractor shall perform his bedding operations with care to maintain line grade and proper depth of valve and hydrants.

3.3. LINES AND GRADES

- A. Easement and property line and other control lines necessary for locating the work are shown on the Drawings for reference only. If exact property lines and easements are required for the project, only drawings stamped by a Licensed Land Surveyor shall be utilized.

3.4. TOLERANCES

- A. Valves and hydrants shall be laid to the lines and grades shown on the Drawings.

3.5. INSTALLATION

- A. The Contractor shall furnish slings, straps, and/or approved devices to provide satisfactory support of the valves or hydrants when lifted. Transportation from storage areas to the trench shall be restricted to operations which can cause no damaged to the coating or lining or castings.
- B. The valves or hydrants shall not be dropped from trucks onto the ground or into the trench.
- C. All valves shall be installed in accordance with the specifications for the pipe to which they are to be connected and as previously described for individual types of valves.

- D. Joints of valves shall be made up in accordance with the Contract Drawings and/or as described under the appropriate pipe joint descriptions found in other sections of these specifications.
- E. The valves shall be so located that they are accessible for operating purposes and shall bear no stresses due to loads from the adjacent pipe.
- F. All valves shall be inspected before installation, and they shall be cleaned and well lubricated before being installed in the line.
- G. Hydrants shall be set at locations specified on the Contract Drawings and shall be of such length that, with the frost ring at the ground surface grade, there shall be 5 feet of cover minimum, over the connecting pipe.
- H. Hydrants shall be set so that the barrel is truly vertical, and shall be properly backfilled so that the barrel will remain truly vertical.
- I. They shall be placed with 3 cubic feet of crushed stone pocket to provide drainage for the hydrant.

3.6. PRESSURE AND LEAKAGE TEST

- A. All installed valves, hydrants and appurtenances shall be subjected to the pressure and leakage test as described under Section 02674.

3.7. DISINFECTION OF WATER VALVES AND HYDRANTS

- A. All installed valves, hydrants and appurtenances shall be subjected to the flushing, sterilization and coliform tests described under Section 02675.

END OF SECTION

SECTION 02674

PRESSURE TESTING OF WATER DISTRIBUTION SYSTEMS

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Pressure testing of all water systems installed under this project.
- B. Test requirements.
- C. Required replacement or repair if test fails.
- D. Project records.

1.2. RELATED SECTIONS

- A. Section 01025 - GENERAL CONTRACT BID ITEMS
- B. Section 01700 - CONTRACT CLOSEOUT
- C. Section 02661 - WATER DISTRIBUTION PIPING
- D. Section 02662 - VALVES AND HYDRANTS
- E. Section 02675 - DISINFECTION OF WATER DISTRIBUTION SYSTEMS

1.3. REFERENCES

- A. AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances.
- B. AWWA C151 - Ductile Iron Pipe.

1.4. TEST REQUIREMENTS

- A. All water mains shall be tested in accordance with AWWA Standard C600. The following procedure shall be used:
 - 1. All newly laid pipe or any valved section thereof, shall be subjected to a hydrostatic pressure 50 percent in excess of the working pressure at any point on the section being tested, but in no case less than 150 lbs per square inch for a period of 2 hours.
 - 2. The Contractor shall accomplish the required tests on the pipeline by individually testing each component section of the installed main. The maximum length of section permitted to be tested at any one time will be approximately 1 mile, and normally will be less.
- B. Test Pressure Restrictions - Test pressure shall:
 - 1. Not be less than 150 psi at the highest point along the test section.
 - 2. Not exceed pipe or thrust restraint design pressures.

3. Be of at least two-hour duration.
4. Not vary by more than ± 5 psi.
5. Not exceed twice the rated pressure of the valves when the pressure boundary of the test section includes closed gate valves.

C. Leakage Test

1. All leakage test shall be conducted concurrently with the pressure test.
2. Leakage Defined - Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure within 5 psi of the specified test pressure throughout the duration of the test after the pipe has been filled with water.
3. The rate of leakage shall not exceed 11.65 gallons per day, per mile of pipe, per inch of nominal pipe diameter based on a test pressure of 150 psi. For the allowable leakage in gallons per hour (gph) for other test pressures refer to Table 4.A of AWWA C600, a copy of which is at the end of this section, including the basic formula for calculating the allowable leakage.

1.5. PROJECT RECORD DOCUMENTS

- A. Submit documents under provisions of Section 01700.
- B. Attached to the end of this section is a "Flushing and Testing of Water Lines Tabulation Sheet" for recording data for flushing and testing of water mains. Engineer shall fill out form at the time of testing and both Contractor and Engineer shall sign upon completion.
- C. Attached to the end of this section is a "Water Pressure Test" form (Form WPT-1) for recording data for pressure testing. Engineer shall fill out the form and submit to the Department of Health.

1.6. REGULATORY REQUIREMENTS

- A. Submit proof of testing as required by local, county, or state agencies.

1.7. FIELD MEASUREMENTS

- A. Measure length of test section.
- B. Measure quantity of water used to maintain test pressure during test period.
- C. Measurements required to complete the Flushing and Testing of Water Lines Tabulation Sheet.

1.8. COORDINATION

- A. Provide 48-hour notice to the Owner of local water department and the Department of Health when water for flushing, testing and disinfection is required.
- B. Owner of existing water system to operate all valves and hydrants unless Contractor has been specifically authorized to operate systems valves and hydrants by Owner.

PART 2 PRODUCTS

2.1. WATER SUPPLY

- A. Owner shall supply water at no cost to the Contractor for initial tests. Additional water needed due to failure of test shall be Contractor's responsibility.
- B. All water for flushing and disinfection shall be furnished and disposed of in accordance with all federal, state, and local requirements by the Contractor at his expense.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Backfilling of the water main trench to ground surface or road surface shall be in place and completed except for final paving for seven calendar days or as approved by the Engineer prior to start of testing of each section of water main.

3.2. PREPARATION

- A. The Contractor shall supply all plugs, pumps, weirs, gauges, etc., necessary to conduct the tests, including means to accurately measure the quantity of water used to maintain test pressure during the test period.
- B. Flush all piping systems with water prior to testing.

3.3. TESTING

- A. Pressure and leakage tests shall be conducted on all water main pipes.
- B. The Engineer shall witness all tests.
- C. All test results shall be recorded on the Flushing and Testing of Water Lines Tabulation Sheet and Form WPT-1 attached at the end of this section.
- D. Pressurization - Each valved section of pipe shall be filled with water slowly and the specified test pressure, based on the elevation of the lowest point of the line or section under test and corrected to the elevation of the test gauge, shall be applied by means of a pump connected to the pipe.
- E. Air Removal - Before applying the specified test pressure, air shall be expelled completely from the pipe and valves.
- F. All pressure testing results shall be recorded on Form WPT-1.
- G. Examination - All exposed pipe, fittings, valves, and joints shall be examined carefully during the test. Any damaged or defective pipe, fittings, or valves that are discovered following the pressure test shall be repaired or replaced with sound material and the test shall be repeated.
- H. All visible leaks, regardless of the amount, shall be repaired.
- I. If the section being tested fails to pass the pressure or leakage test, the Contractor shall determine the source or sources of leakage, and he shall permanently repair or replace all defective materials and/or workmanship at his own expense. The extent and type of repair

as well as results, shall be subject to the approval of the Engineer. The completed pipe installation shall then be retested and required to meet the pressure and leakage requirements of the test.

- J. Testing and retesting shall be completed prior to final paving and prior to disinfection of the water main system.

3.4. WATER SERVICES

- A. Water services to be installed after completion of disinfection of the water mains.
- B. Services to be tested, prior to backfilling by flushing the service pipe thoroughly and by observing for any leaks along the pipe, or at corporation and curb stops.

(continued)

FLUSHING AND TESTING OF WATER LINES TABULATION SHEET

Job No. _____ Location _____

Contract No. _____ Contractor _____

Project _____

FLUSHING

Date _____ Weather _____ Temperature _____

Section Flushed _____ ft. of _____-inch diameter pipe

Line Flushed _____ hrs. ____ min. @ _____ gal/min

Line Flushed Through _____ Hydrant _____-inch tap

Method of Measuring Flow _____

PRESSURE AND LEAKAGE TESTING

Date _____ Weather _____ Temperature _____

Section Tested _____

_____ ft. of _____-inch diameter _____ pipe in _____-ft. laying lengths

Time Started _____ Time Finished _____ Elapsed Time _____

Test Pressure: Start _____ psi Finish _____ psi

Allowable leakage, as calculated _____ gallons Actual leakage _____ gallons

Pass _____ Fail _____

$$L = \frac{SD \sqrt{P}}{148,000^*}$$

where:

L = Allowable leakage in gallons/hour
S = Length of pipe tested (linear feet)
D = Nominal diameter of pipe (inches)
P = Average pressure during test, psi

*Refer to C600 for additional allowance leakage against closed metal-seated valves.

Owner's Representative _____

Contractor's Representative _____

Table 4.A Hydrostatic testing allowance per 1,000 ft of pipeline*—*gph*†

Avg. Test Pressure <i>psi</i>	Nominal Pipe Diameter—in.																	
	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	54	60	64
450	0.43	0.57	0.86	1.15	1.43	1.72	2.01	2.29	2.58	2.87	3.44	4.30	5.16	6.02	6.88	7.74	8.60	9.17
400	0.41	0.54	0.81	1.08	1.35	1.62	1.89	2.16	2.43	2.70	3.24	4.05	4.86	5.68	6.49	7.30	8.11	8.65
350	0.38	0.51	0.76	1.01	1.26	1.52	1.77	2.02	2.28	2.53	3.03	3.79	4.55	5.31	6.07	6.83	7.58	8.09
300	0.35	0.47	0.70	0.94	1.17	1.40	1.64	1.87	2.11	2.34	2.81	3.51	4.21	4.92	5.62	6.32	7.02	7.49
275	0.34	0.45	0.67	0.90	1.12	1.34	1.57	1.79	2.02	2.24	2.69	3.36	4.03	4.71	5.38	6.05	6.72	7.17
250	0.32	0.43	0.64	0.85	1.07	1.28	1.50	1.71	1.92	2.14	2.56	3.21	3.85	4.49	5.13	5.77	6.41	6.84
225	0.30	0.41	0.61	0.81	1.01	1.22	1.42	1.62	1.82	2.03	2.43	3.04	3.65	4.26	4.86	5.47	6.08	6.49
200	0.29	0.38	0.57	0.76	0.96	1.15	1.34	1.53	1.72	1.91	2.29	2.87	3.44	4.01	4.59	5.16	5.73	6.12
175	0.27	0.36	0.54	0.72	0.89	1.07	1.25	1.43	1.61	1.79	2.15	2.68	3.22	3.75	4.29	4.83	5.36	5.72
150	0.25	0.33	0.50	0.66	0.83	0.99	1.16	1.32	1.49	1.66	1.99	2.48	2.98	3.48	3.97	4.47	4.97	5.30
125	0.23	0.30	0.45	0.60	0.76	0.91	1.06	1.21	1.36	1.51	1.81	2.27	2.72	3.17	3.63	4.08	4.53	4.83
100	0.20	0.27	0.41	0.54	0.68	0.81	0.95	1.08	1.22	1.35	1.62	2.03	2.43	2.84	3.24	3.65	4.05	4.32

*If the pipeline under test contains sections of various diameters, the testing allowance will be the sum of the testing allowance for each size.

†Calculated on the basis of Eq 1.

END OF SECTION

WATER PRESSURE TEST

Date: _____

Description: _____

Contractor: _____

Section Tested: From _____ To _____
(station #) (station #)

Length Tested: _____ L.F.

Pipe Type: _____

*Duration of Test: _____ (minimum of 2 hours)

Pipe Diameter: _____

Type of Joints: _____

Type of Appurtenances on Tested Section (list):

W = _____ Where W = Working Pressure of System Tested [lb/sq.inch => psi]

$$\text{Formula: } L = \frac{SD\sqrt{P}}{148,000}$$

Where:

L = _____ Where L = Testing Allowance [gallons/hour]

S = _____ Where S = Length of Pipe Tested [ft]

D = _____ Where D = Nominal Diameter of the Pipe [inches]

P = _____ Where P = Average Test Pressure during Hydrostatic Test [psi] (gauge)

*Test	Time	Pressure [psi]
Start		
Stop		

Pressure Drop [psi]: _____

Water Added Gallons/Hour: _____

Allowable Loss [Gallons/Hour]: _____

ACTUAL < ALLOWABLE % _____ **PASS**
_____ **FAIL**

REMARKS: _____

INITIALS: _____

Professional Engineer

Date

SECTION 02675

DISINFECTION OF WATER DISTRIBUTION SYSTEMS

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Disinfection of all pipes, fittings, valves and hydrants.
- B. Sampling tests of residual chlorine content.
- C. Flushing of water distribution system and its disposal of spent chlorine solutions.
- D. Sampling tests of total coliform.
- E. Project records.

1.2. RELATED SECTIONS

- A. Section 01025 – GENERAL CONTRACT BID ITEMS
- B. Section 01700 - CONTRACT CLOSEOUT
- C. Section 02661 - WATER DISTRIBUTION PIPING
- D. Section 02662 - WATER VALVES AND HYDRANTS
- E. Section 02674 – PRESSURE TESTING OF WATER DISTRIBUTION SYSTEMS

1.3. REFERENCES

- A. AWWA C651 - Disinfecting Water Mains.
- B. County and New York State Department of Health regulations.

1.4. DISINFECTION

- A. All pipe and fittings, valves and hydrants connected to and forming part of a potable water supply system shall be disinfected in full accordance with both the requirements of AWWA Standard C651 and the State (or County) Department of Health having jurisdiction over project and as modified herein.
- B. Disinfection shall be done by the continuous feed method (per AWWA C651).
- C. The Contractor shall bear all costs of flushing, disinfection and coliform testing.

1.5. SUBMITTALS

- A. Disinfection plan, which shall include location of taps, sampling points, and schedule. Plan shall describe the method and rate of chlorine addition and the anticipated flow through the main being disinfected.

1.6. PROJECT RECORD DOCUMENTS

- A. Submit documents under provisions of Section 01700.
- B. Attached to the end of this section is a Disinfection, Testing, and Flushing of Water Mains Tabulation Sheet. Engineer shall fill out form at the time of testing and both Contractor and Engineer shall sign upon completion.

1.7. REGULATORY REQUIREMENTS

- A. Submit proof of testing and disinfection as required by county and/or state Health Departments.
- B. Dispose of chlorinated water in accordance with the requirements of the state and local agencies with jurisdiction over the release of potential contaminants to the environment.

1.8. FIELD MEASUREMENTS

- A. Measurements required to complete the tabulation sheet.
- B. Measurements required by county and/or state Health Departments.

1.9. COORDINATION

- A. Provide 48-hour notice to local Water Department (Owner) and the Department of Health when water for flushing and disinfection is required.
- B. Owner of existing water system to operate all valves and hydrants unless Contractor has been specifically authorized to operate water system valves and hydrants.

PART 2 PRODUCTS

2.1. WATER SUPPLY

- A. Owner shall supply water at no cost to the Contractor for initial tests. Additional water needed due to failure of test shall be Contractor's responsibility.
- B. All water for flushing and disinfection shall be furnished and disposed of in accordance with all federal, state, and local requirements by the Contractor at his expense.

PART 3 EXECUTION

3.1. EXAMINATION

- A. All pressure and leakage tests of the water system shall be completed prior to start of disinfection. See Section 02674.

3.2. PREPARATION

- A. Contractor to employ methods to prevent contaminating materials from entering the water mains during storage, construction, or repair.

- B. All piping systems, valves and hydrants shall be thoroughly flushed of any dirt or contaminating materials that may have entered the water system.
- C. Mechanical methods shall be used to clean the mains if the dirt or debris will not be removed by the flushing operations.

3.3. DISINFECTION

- A. The continuous feed method shall be used for chlorine application.
- B. The introduction of solid hypochlorite (granules) directly into the system is prohibited.
- C. Injection point shall be within 10 feet of the water source.
- D. The new water main shall be filled with not less than 50 mg/L nor more than 100 mg/L of available chlorine and retained in the system for not less than 24 hours.
 - 1. When filling water main with chlorinated water, each hydrant (in consecutive order) shall be flushed until the required residual is measured.
- E. At the end of the 24-hour period, the disinfected water shall contain no less than 25 mg/L available chlorine throughout the system.
- F. Disinfection shall be repeated as often as necessary at the Contractor's cost until the minimum residual chlorine of 25 mg/L has been maintained.

3.4. FLUSHING AND DISPOSAL

- A. The chlorine solution shall be thoroughly flushed out prior to testing for total coliform.
- B. The Contractor shall dispose of the spent chlorine solutions in a manner acceptable to the Owner and regulatory agencies and where its effects will not be detrimental to animal, plant or fish life. Dechlorination shall be utilized when discharging to the environment.

3.5. TOTAL COLIFORM TESTING

- A. After final flushing and before the water main is placed in service, a water sample or samples shall be collected from the new main. At least one set of samples shall be collected from every 1,200 feet of the new water main, plus one set from the end of the line, and at least one set from each branch. All samples shall be tested for bacteriological quality, showing the absence of coliform organisms, in accordance with the local and/or state Health Department procedures.
- B. Analyses shall be performed by state-certified laboratories.
 - 1. Engineer shall accompany Contractor and witness delivery of all samples to the laboratory.
- C. If the initial disinfection fails to produce satisfactory bacteriological results, the new main may be refushed and shall be resampled at Contractor's cost. If check samples also fail to produce acceptable results, the Contractor shall repeat all disinfection procedures until satisfactory results are obtained.
- D. After approval from the Health Department and the Owner, the water mains shall be placed in service.

3.6. SERVICES

- A. After construction of services but prior to connection to home or commercial service line, the service shall be thoroughly flushed to remove any contaminant and to disinfect the new service.

(continued)

DISINFECTION, TESTING, AND FLUSHING OF WATER MAINS TABULATION SHEET

Date _____ Weather _____ Temperature _____

Section Tested _____ ft. of _____-inch diameter pipe

Discharge Rate _____ gal/min; Application of _____ % hypochlorite solution @ gal/min

_____ mg/L initial total chlorine residual @ end of line at _____ (time)

_____ mg/L initial total chlorine residual @ end of 24 hours at _____ (time)

Method of measuring chlorine residual

Line flushed at _____ gal/min for _____ hours _____ min. on _____ (date)

Bacteria sample collected at _____ (location) at _____ (time/date)

Bacteria sample results _____ meet _____ do not meet state and/or county drinking water standards
for total coliform.

Line Ready for Service on _____ (date) _____

(time) Line Put Into Service on _____ (date) _

_____ (time)

Owner's Representative

Contractor's Representative

END OF SECTION

SECTION 02699

UV DISINFECTION

PART 1. GENERAL

1.1 DESCRIPTION

- A. Scope: Furnish all materials, equipment and appurtenances required to provide a pressurized vessel, amalgam lamp based, ultraviolet (UV) disinfection system. The UV system to be complete and operational with all control equipment and accessories as shown on Contract Drawings and specified herein.
- B. The Contractor will purchase the ultraviolet system from Trojan Technologies Inc, or equal. The system is to be installed by the Contractor and tested and commissioned by Trojan Technologies Representatives, as specified in this Section.

1.2 QUALITY ASSURANCE

- A. Pre-qualification Requirements:

Any alternate UV manufacturer that is not listed as approved equal must submit the following 15 days prior to the bid to be considered for approval and be submitted with validation testing by the manufacturer:

Evidence of previous successful performance utilizing low-pressure amalgam lamp systems in similar applications. The proposed manufacturer must be able to demonstrate at least ten (10) permanent installations of this equipment type.

Submittal including Reactor Details, Control Panel, lamp and ballast descriptions, and engineering reports stating headloss.

A Validation Certificate for the proposed system from HydroQual or Carollo Engineers certifying compliance with the USEPA "*Ultraviolet Disinfection Guidance Manual For The Final Long Term 2 Enhanced Surface Water Treatment Rule*," or an allowable alternative validation protocol (e.g. German DVGW, or Austrian ONORM) suitable to the regulatory reviewing agency (New York State Department of Health) and the Engineer.

A statement by the equipment manufacturer listing any deviations or exceptions taken to these specifications shall be submitted. State specification reference and proposed alternative with reason for exception.

Description of manufacturer's service capabilities including local support offered for technical service.

- B. Design Criteria & Performance Requirements:

1. Provide UV equipment, which shall disinfect municipal water with the following characteristics:

Peak Flow From Treatment Plant: 60 GPM

Max DVGW – W294 Validated Flow: 132 GPM

Reduction Equivalent Dose (RED): 40 mJ/cm²

Inactivation Requirements:

- 3-log Giardia inactivation
- 3-log Cryptosporidium inactivation

Water Temperature Range: 32 to 104 degrees F (0 to 40 degrees C)

Ultraviolet Transmittance Range @ 253.7 nm: 80 - 98%

Equipment Redundancy: 100%

Water Entering the UV Unit shall meet the following parameters (Maximum Concentrations Given):

- Dissolved Iron (0.3 mg/L)
- Dissolved Manganese (0.05 mg/L)
- Hardness (120 mg/L)
- Hydrogen sulfide – if odor is present (non-detectable)
- pH (6.5 to 9.5)
- Suspended Solids (10 mg/L)
- Turbidity (1.0 NTU)
- Total Coliform (1000/100 ML)

RED at end of lamp life: 40 mJ/cm² (minimum)

2. Each UV reactor will be configured as follows:
 - a. The UV reactor will be supplied pre-assembled and ready for installation.
 - b. The UV system will consist of 2 UV reactor(s) with an automatic cleaning system. Each UV reactor will consist of a minimum of 1 UV intensity monitor and one Control Panel per reactor.
 - c. The UV system must fit within the piping footprint as stated without modification.
 - d. The maximum operating pressure of the UV System shall be 150 PSI.

1.3 SUBMITTALS

- A. Submit for review, engineering drawings showing the following:
- B. Complete description in sufficient detail to permit an item comparison with the specifications.
- C. Dimensions and installation requirements.
- D. Electrical Drawings
- E. Validation Certificate from HydroQual or Carollo Engineers documenting the dose delivered by the system according to the USEPA *"Ultraviolet Disinfection Guidance Manual For The Final Long Term 2 Enhanced Surface Water Treatment Rule,"* or alternative validation protocol as described in 1.2.A above.
- F. Company information including descriptions of quality control procedures and certifications (eg. ISO 9001 Registration).

1.4 DELIVERY

- A. Contractor shall deliver equipment to the job site in the original packages, packaging shall be undamaged and shall be inspected by Engineer prior to acceptance. Units shall be supplied with all required cables and accessories required to make unit functional including fittings and valves required for installation.

1.5 GUARANTEE

The equipment furnished under this section (excluding UV lamps) will be free of defects in materials and workmanship, including damages that may be incurred during shipping for a period of one (1) year from start-up or 18 months after shipment, whichever occurs first.

The UV lamps are warranted for 12,000 hours of operation or thirty-six (36) calendar months from substantial completion, whichever comes first.

PART 2. PRODUCTS

2.1 UV SYSTEM

2.1.1 MANUFACTURER

- A. The physical layout of the system as shown on the Engineering Drawings and the equipment specified herein are based solely upon the TrojanUVSwift™SC Model B03, Amalgam Lamp System, as manufactured by Trojan Technologies, or Engineer approved equal.
- B. To be acceptable, the UV system must operate in an enclosed vessel and use amalgam UV lamps. In order to maximize hydraulic efficiency, the UV reactor is to be configured such that flow enters parallel to the lamps and exits through a flange located perpendicular to the UV lamps.
- C. The UV system must be designed to fit within the piping and footprint described, without modification.
- D. The UV system is to be furnished with the latest components and equipment available at the time of shipment.

2.1.2 GENERAL REQUIREMENTS

- A. Provide a UV system complete with UV reactor(s), control panel(s), automatic wiping system, and UV intensity monitoring system(s), as herein specified.
- B. Each system shall be designed to allow for complete system shut down or by-pass.
- C. UV reactor(s) will not require draining in order to change UV lamps.

2.1.3 DESIGN, CONSTRUCTION AND MATERIALS

- A. General:
 - 1. All metal components in contact with the feed water shall be Type 316L stainless steel.
 - 2. All material exposed to UV light shall be Type 316L stainless steel, Type 214/219 quartz or a suitable UV resistant material.
 - 3. The system shall be designed for complete immersion of the UV lamps including electrodes and the full length of the lamp in the water.
 - 4. All lamp electrical connections shall be at one end of the UV lamp. The major axis of the UV lamps shall be parallel to flow.
- B. UV Reactor:
 - 1. Each UV reactor shall be manufactured using stainless steel.
 - 2. Each UV reactor shall have a drain port fixed to its outer wall.
 - 3. Each UV reactor shall be designed to fit into the existing pipe work.
 - 4. Each UV reactor shall accept its respective UV lamps and quartz sleeves through only one end of the vessel. This end of the UV reactor shall allow for complete reactor entry so

- internal inspection and/or service can be accomplished.
5. UV reactors shall be able to operate at a maximum inlet pressure of 150 PSI and be furnished with a factory certified pressure test report detailing a minimum hydrostatic pressure test of 225 PSI.
 6. Lamp position within the reactor will be indicated using a numbering system fixed to the lamp wiring at the service end of the UV reactor.
- C. UV Lamps:
1. UV lamps will be low pressure, high output amalgam lamps.
 2. The filament will be significantly rugged to withstand shock and vibration.
 3. Lamp bases to be resistant to UV light.
 4. All electrical connections to the UV lamp will be terminated at one end.
 5. UV lamps will have a lamp base design that which prevents arcing between electrical pins.
 6. UV lamps will have a monochromatic spectral output with the emissions peaking at 254 nanometers.
- D. Lamp End Seal and Lamp Holder:
1. The open end of the UV lamp sleeves will be sealed to the sleeve guide by a suitable compression o-ring.
 2. The O-ring compression is made by a sleeve nut that will require no special tools for installation or removal.
 3. Each UV lamp electrical connection will incorporate a sealing boot, which is held firmly in place by the sleeve nut to prevent emission of ultraviolet rays.
- E. UV Lamp Sleeves:
1. Sleeves will be clear fused Type 214 quartz with a minimum UV transmissibility of 89 percent.
 2. Sleeves will be domed at one end and be accessible through the reactor service entrance.
- F. Electronic Power Supplies:
1. UV lamps are to be operated by an electronic power supply.
 2. A pair of UV lamps shall be powered by one electronic power supply.
 3. Each lamp within the pair shall operate on its own circuit within the power supply so as to provide electrical independence.
- G. UV Sensors
1. Each UV reactor must be supplied with a minimum of one UV Intensity Sensors. The minimum number of UV Intensity Sensors installed shall meet the requirements of DVGW W294 standard (minimum of one sensor per ten (10) lamps).
 2. The UV Intensity Sensor must be approved by the DVGW W294 Standard.
- H. Electrical Control Panel:
1. Each UV reactor will be powered from a Control Panel by means of a water-resistant cable and strain relief.
 2. The Control Panel will be of mild steel construction and powder epoxy coated (Grey).
 3. Control Panel electrical rating will be a minimum of NEMA 4X.
 4. Total power consumption of each reactor under normal operating conditions will be no greater than 530 Watts.
 5. Electrical supply to each Control Panel shall be 208-240 Volt, 1 phase, 2 wire + ground, 750 Watts.
 6. Signal wiring interfacing the UV system and SCADA shall be as shown on the Engineering Drawings.

I. Control and Instrumentation:

1. System Control:

- a. One microprocessor-based controller will be provided per reactor. Microprocessor to be located within a Control Panel with an operator interface display and is to be located indoors.
- b. Control Panel to be 24 inches (610 mm) high, 16 inches (406 mm) wide and 10 inches (254 mm) deep, and constructed of painted mild steel (Grey).
- c. The Control Panel to Reactor cable length will be 15 feet (4.5 meters).
- d. Remote ON/OFF control capabilities are to be provided.
- e. Five 4-20mA input signals will be available.
- f. A 4-20mA output signal will be available for remote monitoring of UV intensity.
- g. A total of (7) configurable non powered discrete dry contact outputs rated at 24 VDC. Please see Part H.2 for available configurable alarm conditions.

2. System Status Alarm List:

These status items indicate that an alarm or alarms in the group are active:

Common Alarm Names and Status	Description
System Warming	Active during 3-minute warm-up
System On-line	Active after warm-up with no alarms
Wiper General Alarm	Any of the 3 wiper alarms
Common Alarm	Any Minor, Major or Critical Alarm
Common Minor Alarm	Any Minor Alarm
Common Major Alarm	Any Major Alarm
Low UV Common Minor	Any Sensor Minor UV Intensity for UV systems with Multiple Sensors.
Low UV Common Major	
Common Major Siren	Any Major or Critical alarm is active

On a minor fault the UVR will remain On-line. Minor alarms will display on the CP and alarm relays will be deactivated. On a minor alarm, action should be taken to correct the problem soon after the alarm but disinfection may or may not be okay.

Wiper alarms are only valid if the UV System has the Wiper Option.

Minor Alarm Name	Description
Low UVT Minor Alarm	If UVT value measured is lower than the set-point.
Valve Open Minor	Valve is open greater than Minor alarm set-point
End Of Lamp Life Hours	The lamp has exceeded the EOLL according to factory programmed set point.
Wiper Revolution Alarm	Incomplete Wiper Cycle. Motor Failure, mechanical Jam, no revolution counts in 1 s.
Wiper Home Alarm	Appears when there is a Wiper Failure during a home cycle. Motor Failure or a mechanical Jam or no revolution counts within 1 second.
Wiper Limit Switch Alarm	Appears when there is a Limit Switch Failure in the "closed circuit" position. (Normally "Open circuit" LED Off)

On a Major alarm immediate action is required by the Operator to ensure that disinfection is not compromised. Alarm relays will be deactivated.

Major Alarm Name	Description
Low UV Intensity 1 Major	Pacing: If UV Intensity has dropped below the calculated low UV Intensity alarm set-point. DVGW Basic Dose: If UV Intensity has dropped below the factory set point.
Low UV Intensity 2 Major - DVGW only for 11 - 20 Lamps	
Low UV Intensity 2 Major - DVGW only for 21 - 30 Lamps	
Low UVT Major Alarm	If UVT is below the alarm set-point
Multiple Lamp Alarms	Multiple lamps not functioning. Factory based set # of 2 or more, that is dependent on the dose required.
Low Dose Major (DVGW) or MS2 RED Low Major (EPA)	UV Intensity dropped below factory set-pt (DVGW) or calculated set-point (EPA) results dose below design.
Lamp Alarm XX Major	Lamp no function, lost power, or lost board comm.
Ballast XX Alarm Major	Ballast no function, lost power, or lost Board comm.
High Flow Alarm Major	Flow Rate exceeds major alarm set point.
Valve Open Major	Valve is open greater than the Major alarm set-point
No Flow Alarm Major	Flow Rate signal is not present below 2.0mA
No UVT Alarm Major	UVT signal is not present below 2.0mA
No Valve Data Major	Valve signal is not present below 2.0mA
SCADA Comm. Alarm Major	SCADA Comm. connection has been lost.
Reactor Hi Temp Major (Analog Temperature Option)	High Temperature Alarm occurs as a warning. This option is available only when an Analog High Temperature is configured.

Minor and major alarms shall flash on the Operator Interface. Upon a high temperature critical alarm, the reactor shall shut down.

The units shall switch to redundant unit for any alarm condition that may compromise full UV destruction and disinfection.

J. Spare Parts:

The following spare parts and safety equipment to be supplied.

- a. 3 - UV Lamps
- b. 3 - Quartz sleeves
- c. 3 - Sleeve Holder Seals
- d. 1 – Ballast
- e. 0 – Ballast cooling fan (N/A for Trojan Model B03)
- f. 2 – Duty UV sensor
- g. 2 – Reference UV sensor
- h. 1 – On-line UVT analyser

K. UVT Analyzer and Reference Sensors:

1. Benchtop UVT Analyzer
 - a. A benchtop UVT analyser shall be available to check the on-line meter. Calibration of the on-line meter shall be completed weekly in accordance with the Recommended Standards for Water Works. Benchtop UVT analyser shall be a Hach DR1900 Spectrophotometer Portable, DR1900-01H or engineer approved equal.
2. Reference Sensor
 - a. A reference sensor shall be provided to check the calibration of the UV sensor(s)

on a monthly basis.

L. Wiping System:

1. Automatic Wiping System

- a. Each UV reactor will be provided with an automatic sleeve wiping system. The wiping system will be driven by a wiper motor.
- b. Wiping system to be designed such that wiping the lamps while the UV system is in operation will be possible.
- c. The wiper rings will be fabricated of food-grade Viton rubber.

PART 3. EXECUTION

3.1 INSTALLATION

- A. Installation shall be by others in accordance with the contract drawings, manufacturer's engineering drawings and instructions.
- B. Contractor shall provide UV disinfection units installed on a 2" square steel frame capable of supporting the UV disinfection units filled with water and to be utilized while transferring the units from temporary treatment to the final water treatment plant building upgrade as detailed within the Contract Documents.

3.2 MANUFACTURER'S SERVICES

- A. Start-up and Operator training: 1 full day on site.
- B. Warranty service scheduling: As required during the specified warranty period.

END OF SECTION

SECTION 02980
SITE REHABILITATION

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Site rehabilitation of lawns, existing cultivated or landscape items such as trees, shrubs, hedges, saplings, vines, ground cover vegetation, gardens, etc.
- B. Restoration of uncultivated lands.
- C. Topsoil, fertilizer, seeding, mulching and planting.
- D. Site rehabilitation of walls, terraces, fences, ditches, drains, culverts, drives, posts, patios, outdoor recreational equipment, garden decorations and appurtenances, small structures, and all other artificial features.
- E. Site modifications and development to meet new conditions.
- F. Removal and disposal of all excess materials, equipment, trash and debris used for, or resulting from, the work included in this section.

1.2. RELATED SECTIONS

- A. Section 01025 - GENERAL CONTRACT BID ITEMS
- B. Section 01039 - COORDINATION AND MEETINGS
- C. Section 01300 - SUBMITTALS
- D. Section 02110 - SITE CLEARING
- E. Section 02225 - TRENCHING: Basic site restoration.
- F. Section 02510 - HOT MIX ASPHALT PAVING

1.3. REFERENCES

- A. The American Association of Nurserymen Standards - ANSI Standard 2-60.1, "Nursery Stock."
- B. Soil Conservation District of the Department of Agriculture.

1.4. QUALITY ASSURANCE

- A. Areas and Features to be Restored
 - 1. All areas, including natural features occurring thereon, which are damaged or disturbed by the Contractor's operations, shall be restored, repaired or replaced to the same or superior condition which existed prior to construction or as modified herein or as shown on the Drawings.

2. Artificial features shall be restored equal to a new condition or as modified herein or as shown on the Drawings.

1.5. SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Submit the source nursery for all plantings.
- C. Topsoil - Submit sieve analysis and characteristics of topsoil as listed in Part 2.
- D. Seed mixture data.

1.6. QUALIFICATIONS

- A. All planting material to be furnished from a nursery which meets the requirements of the American Association of Nurserymen.

1.7. PACKING AND SHIPPING

- A. All seed furnished for this project shall be delivered in standard size unopened bags of the vendor, showing weight, mixture, vendor's name and guaranteed analysis.

1.8. STORAGE

- A. Seed shall be properly stored in dry conditions at the site of the work.
 1. Any seed damaged or spoiled during storage shall be replaced by the Contractor.

1.9. ENVIRONMENTAL CONDITIONS

- A. Topsoil shall not be delivered or placed in a frozen or muddy condition.
- B. Seeding is to be done on dry or moderately dry soil.
 1. Seeding is to be done when the wind velocity does not exceed 5 miles per hour.

1.10. SCHEDULE

- A. The Contractor is advised to do all seeding during the periods of May 1st to June 15th, or August 15th to October 1st.
 1. Seeding may be conducted under unseasonable conditions without additional compensation, and at the option and full responsibility of the Contractor.

1.11. GUARANTEE

- A. Any new, reestablished, replaced or disturbed plant material that fails to respond properly within the one-year guarantee period shall be replaced as specified above at the Contractor's expense.

PART 2 PRODUCTS

2.1. MATERIAL

A. Topsoil

1. Topsoil shall be natural, fertile, friable agricultural soil capable of sustaining healthy vegetative growth.
2. Topsoil shall meet the following gradation requirements free of stones, roots, sticks and other foreign substances:

GRAIN DIAMETER	SIEVE SIZE	PERCENT PASSING BY WEIGHT
6.3 mm	6.3 mm	100
4.75 mm	No. 4	60-85
.075 mm	No. 200	20-45
.002 mm	--	7-27

- a. Topsoil shall contain less than 52 percent sand.
3. The pH of topsoil shall be between 5.0 and 7.0.
4. Topsoil shall contain no less than 6.0 percent organic matter.
5. Topsoil may be from previously excavated, stockpiled and protected materials, provided the materials meet the requirements for topsoil.

B. Fertilizer

1. General Fertilizer
 - a. Fertilizer shall be a complete, partially organic, commercial 10-6-4 fertilizer.
 - b. All fertilizer shall contain a minimum of 10 percent nitrogen, 6 percent available phosphorous and 4 percent potash.
 - c. Other commercially available fertilizers, such as 20 10-10 and 12-6-6, may be utilized provided that spreading rates are adjusted to provide the aforementioned minimum requirements for nitrogen.
2. Plant Fertilizer - As recommended by local Soil Conservation District of the Department of Agriculture for the type(s) of soil(s) and plant(s).

C. Seed

1. All seed shall be fresh, recleaned and of the latest crop year.
2. Each component shall meet or exceed the minimum state and federal requirements for purity and germination for that component.
3. The weed content of each component shall not exceed 0.1 percent.
4. The following seed mixture is suggested for lawns or cultivated (landscape) areas:

PERCENT BY WEIGHT	VARIETY	PURITY	GERMINATION
50	Kentucky Blue Grass	85%	80%
20	Red or Chewing Fescue	97%	80%
30	Red Top	92%	90%

- a. Variations may be recommended by qualified personnel, but shall not be used without approval by the Engineer.
5. For uncultivated areas furnish perennial rye grass seed.
- D. Mulch for Tree or Shrub Plantings - Mulch shall consist of dry, clean, hardwood chips.
 - E. Mulch for Seeded Areas - Mulch shall be oat, wheat or rye straw, or hay, free from noxious weeds and other materials which may interfere with the establishment of a healthy stand of grass.
 - F. Plantings - Trees, shrubs, vines, ground cover and other vegetation to be replaced or installed new as specified which meet the requirements of the American Association of Nurserymen.
 1. Classifications of plants, dimensions, planting procedures, etc., shall conform to ANSI Standard Z 60.1, "Nursery Stock."
 - G. Peat Moss - As recommended by the supplier of nursery stock.
 - H. Metal Edging
 1. Edging shall be 3/16-inch thick by 4-inches high steel in 16- and 20-foot lengths.
 - a. Secure edging with 16-inch long tapered steel stakes at 30 inches on center.
 - b. All steel materials shall be painted with one coat of epoxy primer and two coats of epoxy finish.
 - I. Weed Barrier - Weed barriers shall consist of two plies of 6-mil thick black polyethylene film.
 - J. Stones
 1. All stones used for landscape surfacings shall be between 2 and 4 inches in maximum dimension and average to about 3 inches.
 - a. Stones shall be well-rounded.
 2. All stones used for mowing strips shall be a washed crushed stone, size 1/2-inch to 1-inch size.
 - K. Tree Wrapping - Wrapping for trees shall be 8-ounce first quality burlap.
 - L. Asphalt Paving - Shall be furnished and installed in accordance with Section 02510.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Determine that surface area is ready for fine grading and/or to receive topsoil and seeding or plantings.
 - 1. Remove trash, debris, large stones and other foreign materials from surface areas to be restored or rehabilitated.
 - 2. Topsoil shall be free of frozen fragments, debris, large stones, and other foreign materials.

3.2. PREPARATION

- A. Fine Grading - Areas requiring topsoil shall be fine graded to within 4 inches of finished grade to provide a minimum compacted thickness of 4 inches of topsoil at all locations.
 - 1. All such areas, whether in cut or fill, shall be raked to a depth of 1 inch, be parallel to finished grade as shown or required and shall be free of all stones, larger than 1 inch, roots, rubbish and other deleterious material.

3.3. INSTALLATION

- A. Areas to be Developed
 - 1. When the project site is to be modified and developed to meet new conditions, the Contractor shall perform all required grading, topsoiling, fertilizing, seeding, planting, mulching and maintenance of areas, all in accordance with the Drawings and as specified herein.
 - 2. Unless shown otherwise on the Drawings, the entire unpaved area within the grading limits and within the overall areas excavated and backfilled shall be so developed.
 - 3. New landscaping work and artificial features, if any, are shown on the Drawings and specified elsewhere.
- B. The Contractor shall reestablish all existing cultivated or landscape items, trees, shrubs, vines and ground covers as practicable.
 - 1. He shall provide additional or modify existing vegetation, as shown on the Drawings.
 - 2. Existing trees, plants, shrubs, saplings, ground cover, vines, etc., which are disturbed or damaged by the Contractor's operations shall be replaced with new plant materials.

3.4. TOPSOILING

- A. Topsoil shall be furnished and spread in the required areas to a depth of approximately 4 inches.
 - 1. Stockpiled topsoil may be used if it is acceptable to the Engineer.

2. In the event this topsoil is not satisfactory, or is inadequate to cover the required areas, the Contractor shall furnish the required amount of satisfactory topsoil from approved sources off the site.
- B. The soil shall be uniformly compacted with a light hand roller to a final depth of not less than 2 inches.
1. When finished, the surface shall conform to the finished grades shown or required and shall have a smooth pulverized surface at the time of seeding.
 2. Any irregularities shall be corrected before the fertilizer and seed are placed.
 3. Any subsequent settlement or displacement of the topsoil shall be restored to an acceptable condition at the Contractor's expense.

3.5. FERTILIZING

- A. The fertilizer shall be uniformly spread by a mechanical spreader at the rate of 25 lbs. per 1,000 square feet.
1. The fertilizer shall be incorporated into the upper 2 inches of topsoil immediately after spreading.
 2. Other commercial fertilizers, such as 20-10-10 or 12 6-6 may be used at rates adjusted to provide the same quantity of nitrogen per 1,000 square feet.

3.6. SEEDING

- A. Seed shall be applied at a rate of not less than 5 lbs. per 1,000 square feet using a mechanical spreader.
1. Upon completion of the seeding, the area shall be raked lightly and rolled with a light hand roller.
- B. The process of spraying grass seeds, water, fertilizer and mulch known as hydro-seeding or hydro-mulching may be utilized provided that water hazards are minimized.
1. Presoaking, the spraying of the materials and watering after spraying shall be in strict accordance with the manufacturer's instructions.
 2. All materials, protection, maintenance, etc., shall be in conformance with this specification.
 3. The mulch may be a wood fiber material compatible with the spray equipment.

3.7. PLANTING

- A. All new plant materials which are to replace existing plant materials shall be of the same genus and species as the original, and shall be placed in the same location as the item being replaced.
1. The size of the new plant materials shall, if practical, match that of the item being replaced, consistent with normally available sizes from nursery stock.

2. Depending on the size and type of material, and when ordered by the Engineer, guy wires, stakes, anchors and wrappings shall be furnished and installed in a proper manner to brace and protect the plant.
 3. The Contractor shall, as soon as practicable, water and maintain all reestablished, replaced or disturbed plant materials until final acceptance of total.
- B. Plant shall be set plumb and true.
1. Shape area around saucer to form drainage grades as shown on the Drawings.
- C. Install wooden posts, guy wires and hose section for protection as shown on the Drawings.
1. Provide three guy wires per planted item.
- D. For all trees of 2-inch caliber or larger, wrap with tree wrap.
1. Begin at base of tree and work upward to the first branches.
 2. Tie the burlap wrap with cord (no synthetic cord nor wire) at 2-foot intervals and at the bottom and top.
- E. Place weed barriers on prepared subgrade at depth shown on the Drawings.
1. Turn up weed barrier at all edges and corners.
- F. Place washed stone over weed barriers to the specified depths.
1. Rake stone to produce a smooth, uniform surface.
- G. Install metal edging such that the top edge projects 1/4 inch above surrounding soil and stone.

3.8. MULCHING AND PROTECTION

- A. The Contractor shall protect and maintain seeded areas to assure a full even stand of grass.
1. Immediately after seeding and rolling, the Contractor shall apply oat, wheat or rye straw, or hay, free from noxious weeds, as a mulch, to a loose depth of about 1 inch.
 2. The Contractor shall perform all watering and reseeding as necessary for a minimum of 30 days and until final acceptance of the Contract, to ensure the establishment of a uniform stand of specified grasses.

3.9. MAINTENANCE

- A. Any portion of seeded areas failing to produce a full uniform stand of grass from any cause, shall be reseeded at full rate and refertilized at one-half rate and protected and maintained until such a full stand has been obtained.
- B. Plantings to be maintained for one year.

3.10. RESTORATION OF UNCULTIVATED LANDS

- A. Areas of uncultivated land shall be restored as follows:

1. The disturbed surfaces shall be rough-graded to the original elevations (± 1 inch) and general appearance which existed prior to construction (or to the new elevations and grades which are required), all debris, loose stones over 1 inch, boulders, etc., being removed in the process.
2. The surface shall then be seeded with perennial rye grass, being spread at the rate of 1 lb. per 800 square feet.
3. The area need not be raked or rolled after completion of seeding.

3.11. SPECIAL CONDITIONS

- A. Damaged Trees - Vegetation which has been damaged by site preparation activities and deemed non-functional by the Owner or engineer, shall be replaced by the Contractor with vegetation of the same caliper, genus and species at no additional compensation to the Contractor.

END OF SECTION

SECTION 03001

CONCRETE

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. All concrete structures.
- B. Sidewalks.
- C. Concrete mixes.
- D. Concrete testing.
- E. Concrete curing and protection.
- F. Bonding agent.
- G. Concrete slab sealer.
- H. Saw cutting concrete and repair to exposed steel reinforcement.
- I. Leakage testing.
- J. Non-shrink grout.
- K. Chemical adhesive system to install dowels and bolts.
- L. Foundation dampproofing.
- M. Waterstops.
- N. Joint filler and sealant.
- O. Restrictions regarding embedments in concrete.

1.2. REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

ACI 201.1	Guide for Conducting a Visual Inspection of Concrete in Service
ACI 211.1	Selecting Proportions for Normal, Heavyweight, and Mass Concrete
ACI 301	Specifications for Structural Concrete
ACI 302.1	Guide for Concrete Floor and Slab Construction
ACI 304	Measuring, Mixing, Transporting and Placing Concrete
ACI 305	Hot Weather Concreting
ACI 306	Cold Weather Concreting
ACI 308	Guide to Curing Concrete

ACI 309	Guide for Consolidation of Concrete
ACI 315	Details and Detailing of Concrete Reinforcement
ACI 315R	Manual of Engineering and Placing Drawings for Reinforced Concrete Structures
ACI 318	Building Code Requirements for Structural Concrete
ACI 347	Recommended Practice for Concrete Formwork
ACI 350	Code Requirements for Environmental Engineering Concrete Structures

B. American Society for Testing and Materials (ASTM)

ASTM A185	Steel Welded Wire Reinforcement, Plain, for Concrete
ASTM A497	Steel Welded Wire Reinforcement, Deformed, for Concrete
ASTM A615	Deformed and Plain Billet Steel Bars for Concrete Reinforcement
ASTM C31	Making and Curing Concrete Test Specimens in the Field
ASTM C33	Concrete Aggregates
ASTM C39	Compressive Strength of Cylindrical Concrete Specimens
ASTM C88	Soundness of Aggregates
ASTM C94	Ready-Mixed Concrete
ASTM C136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C143	Test Method for Slump of Hydraulic-Cement Concrete
ASTM C150	Portland Cement
ASTM C172	Sampling Freshly Mixed concrete
ASTM C231	Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C260	Air-Entraining Admixtures for Concrete
ASTM C309	Liquid Membrane Forming Compounds for Curing Concrete
ASTM C494	Chemical Admixtures for Concrete
ASTM C595	Specification for Blended Hydraulic Cements
ASTM C618	Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C989	Ground Granulated Blast-Furnace Slag for Use in Concrete

1.3. SUBMITTALS

- A. Submit Concrete Mix Designs - Concrete mixes used on this project shall be either established mixes verified by "Field Test Data" or new custom laboratory designed "Trial Mixtures." Requirements for either option are as follows.

All data shall be dated within the last 12 months. Partial submittal will not be reviewed.

1. List amount and sources of mix ingredients:
 - a. Cement.
 - b. Pozzolans (fly ash and slag).

- c. Fine aggregate.
 - d. Coarse aggregate.
 - e. Water.
 - f. Admixtures (including fibers).
2. Strength Test Reports - The average strengths shall be higher than the required average compressive strengths (f'_{cr}) as per ACI 301, paragraph 4.2.3.3.
 3. Typed letter signed by an official from concrete supplier stating that all ingredients for proposed mix(es) are identical and from the same source as ingredients used for concrete in provided strength test reports.
 4. Certified tests of fine and coarse aggregates meeting requirements in Part 2 of this specification.
 5. Certified statement from source of fine and coarse aggregates pertaining to history of alkali-aggregate reactivity (ASR) or State DOT confirmation that ASR issues are not evident at the aggregate source.
 6. Certified mill test of cement and fly ash or slag.
 7. Certified test for amount of water-soluble chloride ion (CL-) in concrete.
 8. One-page admixture catalog cuts.
- B. Submit one-page catalog cut for bonding agent.
 - C. Submit one-page catalog cut for retarding admixture.
 - D. Submit one-page catalog cut for surface-applied hot weather evaporation reducer.
 - E. Submit a written statement regarding Contractor's anticipated curing procedures.
 - F. Reinforcing Steel - Submit shop drawings in accordance with ACI 301, ACI 315 and ACI 315R, as modified below.
 1. Drawings shall be clearly drawn and show enough details to locate every bar without the need to refer to the Contract Drawings. All construction and control joints must be shown. Photocopies of Contract Drawings, in whole or in part, will not be acceptable.
 2. No fabrication shall commence until shop drawings are approved. All bars shall be shop fabricated.
 - G. Submit catalog cuts for non-shrink grout.
 - H. Submit catalog cuts for chemical adhesive system used to install dowels and bolts into hardened concrete and masonry.
 - I. Submit catalog cuts for joint filler and sealant.
 - J. Submit catalog cut for slab sealer.

- K. Submit catalog cuts for waterstops and waterstop accessories, clearly indicating which item(s) are to be used.
- L. If concrete repairs are needed, the Contractor shall submit proposed repair products and procedures specified in Part 3 of this specification.
- M. Submit special requests for embedment of conduit, etc. Reference restrictions in Part 3 of this specification.

1.4. COORDINATION

- A. Coordinate all concrete placements with work (general, civil, architectural, structural, mechanical, electrical, plumbing, HVAC, etc.) indicated in all specifications and on all Contract Drawings.
- B. Coordinate the installation of all cast-in (embedded) items (i.e., grating frames, access hatches, anchor rods, etc.) prior to start of concrete placement. Post-installation of cast-in (embedded) items will not be allowed.
- C. Contractor shall receive approval on anticipated curing and protection procedures prior to placement of all concrete.
- D. Coordinate all concrete placements with testing and inspection requirements specified herein.

1.5. QUALITY ASSURANCE

- A. The concrete batch plant providing concrete to this project shall be certified by the NYSDOT.
- B. Bar Identification and Mill Test Reports - All reinforcing bars shall have the manufacturer's mill marking rolled into the bar which shall indicate the producer, size, type, and grade.
- C. Concrete testing shall be performed prior to and during placement.

PART 2 PRODUCTS

2.1. CONCRETE

- A. Concrete Classes and Their Use
 - 1. Mix A - All general uses not otherwise specified or provided for below.
 - 2. Mix C - Concrete fill topping (not exposed to flowing water) and pipe supports and encasements.
 - 3. Mix D - Concrete thrust blocks (below grade).
 - 4. Mix E - Sidewalks, curbs, bench walls, exterior slabs.

Mix	28-Day Compressive Strength (psi)	Coarse Aggregate Size per ASTM C33	Minimum Total Cementitious Content (lbs/CY)	Maximum Water/ Cement Ratio (w/c) ⁽¹⁾	Air Content % ⁽²⁾	Maximum Water-Soluble Chloride Ion (CL ⁻)
A	4,000	#57	550	0.44	6.0	0.30
C	4,000	#7	550	0.44	7.0	0.30
D	3,000	#57	450	0.50	--	--
E	5,000	#57	600	0.40	6.0	0.15

(1) These maximum water/cement ratios shall be considered for selection of supplier's mix designs. The water/cement ratio specified in the approved mix designs shall be the maximum used in production.

(2) Tolerance for air content is +1-1/2 percent.

B. All concrete exposed to weather or freezing temperatures shall be air-entrained as specified in the above chart.

C. Without plasticizers, concrete slump for flatwork shall not exceed 3 inches. Wall concrete, columns, deep beams, and other vertical placements (without plasticizers) shall be placed with a maximum slump of 4 inches.

2.2. MATERIALS

A. Cement shall be Portland cement Type I or Type II and shall conform to ASTM C150.

B. Pozzolans

1. Fly ash shall meet the requirements of ASTM C618 Class F, except as modified below:

a. Loss of Ignition, Maximum - 5.0 percent.

b. Maximum Retained on #325 Sieve - 30 percent.

A blend of Portland cement and fly ash shall be between 15 to 25 percent of total cementitious content.

2. Blastfurnace slag shall meet the requirements of ASTM C989 and be specifically manufactured to produce higher concrete strengths and provide greater resistance to chloride penetration and sulfate attack.

A blend of Portland cement and ground iron blastfurnace slag shall contain no more than 50 percent slag. The resulting blend of cementitious material shall meet the requirements of ASTM C595.

C. Aggregates

1. Fine Aggregate (Sand)

a. Natural or manufactured siliceous sand.

- b. Quantity of deleterious substances as approved by State DOT or as limited by Table 1 of ASTM C33.
 - c. Graded within the limits of ASTM C33.
- 2. Coarse Aggregate
 - a. Crushed stone or crushed gravel.
 - b. Quantity of deleterious substances as approved by State DOT or as limited by Table 3 of ASTM C33 for Class 3S aggregates.
 - c. Graded within the limits of ASTM C33.
- 3. Five cycle soundness tests for fine and coarse aggregates shall meet the requirements of ASTM C33.

PERCENT LOSS

	MAGNESIUM SULFATE	SODIUM SULFATE
Fine aggregate ⁽¹⁾	15	10
Coarse aggregate ⁽²⁾	18	12

- (1) If provided, results of soundness tests exceed these limits, it would be acceptable to provide a certified letter attesting to the favorable performance of the fine aggregates as outlined in ASTM C33, Article 8.
- (2) Soundness tests for coarse aggregates do not need to be provided if they are approved by State DOT for use with concrete. Submit verification of such.

- 4. Source of fine and coarse aggregates shall not have a history pertaining to alkali-aggregate reactivity. In the event that aggregate source with potential alkali-aggregate reactivity is unavoidable, at least two of the following measures shall be taken to minimize this reaction:
 - a. Provide low alkali cement (<0.60 percent alkalies).
 - b. Use lithium-based additives.
 - c. Test aggregates to show non-reactive.
 - d. Use fly ash or slag.

D. Mixing Water - Clear and potable.

E. Acceleration admixtures are only allowed to shorten cold weather protection periods.

2.3. ADMIXTURES

- A. General - Admixtures other than those specified may only be used after written approval by the Engineer.
- B. Admixtures shall be as manufactured by BASF Chemical Company; Sika Corporation; The Euclid Chemical Company; W.R. Grace, Inc.; or equal.

- C. Air Entrainment Admixture - All concrete requiring air entrainment shall contain an air entrainment admixture meeting the requirements of ASTM C260.
- D. Water Reducing Admixture - All concrete shall contain a water reducing admixture that meets the requirements of ASTM C494 Type A (water reducing) or Type F (superplasticizer). This admixture shall not contain chlorides.
- E. Retarding Admixture - If air temperatures are expected to exceed 85 degrees F during the placement and/or finishing of any flatwork, a retarding admixture shall be used that meets the requirements of ASTM C494 Type D.
- F. Evaporation Reducer - For all concrete flatwork during hot and/or windy weather conditions, apply to freshly placed concrete prior to finishing. Use BASF Chemical Company "Confilm," L&M Construction Chemicals "E-Con," Conspec (by Dayton Superior) "Aquafilm," or equal.

2.4. OTHER PRODUCTS

- A. Bonding Agent - When placing freshly-mixed concrete against existing hardened concrete, use a corrosion inhibiting, non-vapor barrier, extended open time bonding compound.

Use Sika Corporation "Armatec 110 EpoCem," The Euclid Chemical Company "Duralprep A.C.," Larsen Products Corporation "Weld-Crete," or equal.
- B. Liquid curing compound shall only be used during cold weather conditions and curing of foundation wall strip footings. When allowed, use a dissipating, VOC-compliant, water-based membrane forming with fugitive dye, conforming to ASTM C309, Type 1-D. Curing compound shall be applied at twice the manufacturer's recommended application rate.
- C. Slab sealer shall be Sika Corporation "Sikagard 701W," Euclid Chemical Company "Super Aqua Cure Vox," V-Seal "Industra-Seal 100+," or equal.
- D. Waterstop material shall be PVC 6-inch x 3/8-inch ribbed center bulb waterstop No. CR-6380 by "Wirestop" of Paul Murphy Plastics Company; No. RB6-38 by "Vinylex;" No. 705 by "Greenstreak;" or equal.

For expansion joints, use PVC 9-inch by 3/8-inch ribbed center bulb (nominal 1 inch in diameter) waterstop.
- E. Where shown on the Drawings and where new concrete is cast against existing concrete, use a premolded 1-inch by 3/4 inch bentonite self-adhering waterstop strip which expands on contact with water, applied with primer adhesive. The bentonite waterstop material shall meet the requirements of ASTM D217. Waterstop and adhesive shall be "Waterstop-RX" and "CetSeal" by CETCO Building Materials Group; "Swellstop" and "Swellstop Primer" by Greenstreak; or equal.
- F. Expansion and isolation joint filler shall be preformed, closed cell, high grade polyethylene or non-extruding PVC, such as "Expansion Joint Filler" by BASF Chemical Company; "Plastic Expansion Board" by Westec Barrier Technologies; "Deck-O-Foam" by W.R. Meadows, Inc.; or equal.
 - 1. Joint fillers shall be held back for sealants.
 - 2. The joint filler shall be compatible as a back-up material, with regard to the sealant not bonding to or being stained by the backup.

- G. Sealant for expansion joints in concrete structures designed for submerged conditions to either contain or hold out liquids (including groundwater) such as tankage, basements, flow channels, galleries, etc. shall be a two-component NSF approved polyurethane material.

Use Sika Corporation "Sikaflex-2c," The Euclid Chemical Company "Eucolastic II," or equal.

- H. Wall dampproofing shall be a heavy duty fibrated asphalt emulsion per ASTM D1227, Type II applied over an asphalt primer per ASTM D41.

- I. Non-Shrink Grout shall be a fluid or flowable non gas liberating cement base product which is manufactured premixed, requiring only the addition of water at the job site. All components shall be inorganic.

Non-shrink grout (mixed as a plastic state) shall have a minimum compressive strength of 5000 psi in 7 days and 7000 psi in 28 days.

- J. After material sources have been established and approved, these sources shall not be changed for the duration of the project.

PART 3 EXECUTION

3.1. CONCRETE COVER

- A. Clear concrete cover not indicated on Drawings shall conform to ACI 318 and ACI 350, as applicable. However, in no case shall the clear cover be less than 1-1/2 inches.
- B. Contrary to the practice permitted by CRSI, the use of brick or CMU block supports for reinforcement shall not be permitted. Only special made wire bar supports or special cast, precast concrete blocks shall be allowed.
- C. All metal and plastic bar supports bearing on grade shall have continuous runners to prevent settlement during construction activities.

3.2. PREPARATION, MIXING, AND HANDLING OF CONCRETE

- A. Batch Plant Requirements - Measurement of materials at the batch plant shall be in accordance with ASTM C94.
- B. Mixing Methods - All concrete shall be ready mixed to meet the requirements of ASTM C94.

A written delivery slip or ticket, prepared and signed by the plant operator shall be made out at the proportioning plant for each truck load batch. Each slip shall show the following information:

1. Truck number
2. Date and time truck is batched
3. Ticket number
4. Mix designation of concrete (per paragraph 2.01.A)
5. Cubic yards of concrete

6. Cement brand, type and weight in pounds
7. Weight in pounds of each size and type of aggregate
8. Admixtures, brand and weight in pounds and ounces
9. Moisture content of fine and coarse aggregates
10. Water added to the batch at the plant
11. Water added to the batch during transport
12. Water added to the batch at the job site

The driver shall record the number of gallons of water added during transport and at the job site. In no case shall the w/c ratio be exceeded.

Any truck delivering concrete to the job site without a delivery slip will be rejected and shall immediately depart from the job site.

- C. Heating and Cooling of Materials - The batch plant shall be equipped to heat aggregates and water, or cool water with ice, and cool aggregates by shading and/or spraying with cool water to obtain acceptable concrete delivery temperatures in the range of 55 to 85 degrees F. Aggregates shall not contain ice or have frozen lumps nor shall they be heated to a temperature over 120 degrees F.

3.3. EMBEDMENTS IN CONCRETE

- A. Install and secure all cast-in components in accordance with manufacturer's recommendations, prior to concrete placement.
- B. Embed no pipes other than electrical conduit in structural concrete.

Obtain approval from Engineer for any variation from the following requirements unless shown on the Drawings. Make request in writing accompanied by suitable sketch.

1. Do not cut or displace any reinforcement.
2. Do not place conduit between concrete surfaces and reinforcement.
3. Restrict O.D. of conduit to 1/4 of slab thickness. Keep within middle half of that thickness.
4. Place parallel conduits apart at least six times O.D. of conduit being used.
5. Conduits that cross must be bent such that they cross between 45 and 90 degrees from each other.
6. Conduits that cross can touch each other, but no more than three conduits can cross at any given location.
7. Do not embed conduit in beams.

3.4. CONCRETE PLACEMENT

- A. The Contractor shall notify the Engineer (and Special Inspector when required) a minimum of 48 hours in advance of placement to allow sufficient time for inspection and for any corrective measures which are subsequently required.
- B. Concrete shall be placed in accordance with ACI 304 and ACI 318.
- C. Concrete shall be placed and vibrated in lifts not exceeding 30 inches.
- D. Curing and protection of the concrete shall begin immediately after completion of the finishing operation.
- E. Adjacent concrete placements (sections) shall not be placed any sooner than three days since newly cast sections.

3.5. CURING AND PROTECTION

- A. All freshly placed concrete shall be protected from adverse weather elements, and from defacement. As soon as the concrete has been placed and horizontal top surfaces have received their required finish, provision shall be made for providing sufficient water for hydration and preventing loss of moisture from the concrete for at least a seven day period.
- B. For the first 24 hours after concrete finishing, no work shall commence nor shall any material be placed on the newly cast concrete. The exposed concrete surfaces shall be protected from any potential damage with plywood or other means for the remaining six days of the curing period.
- C. Interruptions, not to exceed a total of four hours are permitted for the purpose of layout or other required construction needs as long as the surface is not allowed to completely dry. Be prepared to spray the exposed surface every 15 to 30 minutes.
- D. Slabs and Other Flatwork
 - 1. After finishing and immediately after the concrete surface has hardened enough to prevent dilution of the cement paste, spray the surface with water to provide continuous moist curing for at least the first 24 hours.
 - 2. After the initial 24 hour period, soak with water and cover for an additional six days with waterproof paper or white polyethylene blankets. Wet burlap coverings may be used if the burlap is kept wet by continuous sprinkling with water. Lap the cover material at least 12 inches, covering the top and sides of the concrete.
 - 3. If cover material is not used, the concrete surfaces shall be kept continuously wet by spraying or other approved methods.?
- E. Strip Footings (Note: Strip footings include footings of foundation frost walls.)
 - 1. After finishing, apply curing compound at twice the manufacturer's recommended application rate.
 - 2. Curing compound shall be applied to and seamlessly cover all exposed surfaces.
- F. In hot weather conditions (defined in ACI 305), provide curing procedures as outlined above along with additional provisions required by ACI 305.

- G. In cold weather conditions (defined in ACI 306) where heated enclosures are provided and when continuous moist curing of walls and slabs is not practical, use liquid membrane forming curing compounds with fugitive dye, applied at twice the manufacturer's standard rate of application.
- H. For the first 24 hours after concrete finishing, no work shall commence nor shall any material be placed on newly cast concrete. The exposed concrete surfaces shall be protected from any potential damage with plywood or other means for the remaining six days of the curing period.

3.6. SEALING OF CONCRETE

- A. The concrete surfaces identified in the Finish Schedule shall be sealed as follows:
 - 1. The first coating shall be applied as soon as possible after finishing and curing, and the second coating shall be applied near project completion after installation of all equipment and piping and after completion of other related construction activities.
 - 2. Apply sealer in accordance with manufacturer's recommendations.

3.7. BITUMINOUS WALL DAMPPROOFING

- A. Comply with manufacturer's printed recommendations for preparation of wall surface.
- B. Clean surfaces of soil, debris, and all foreign matter. Allow cleaned surfaces to dry.
- C. Apply a uniform coating of asphalt primer per manufacturer's recommendations.
- D. Provide continuous uniform dampproofing coating, 3/32 inch minimum dry thickness. Apply dampproofing by brush.
- E. Dampproof vertical wall surfaces to within 4 inches of finished grade at top of walls. At bottom of walls, extend dampproofing across horizontal projection of footing and down face of footing approximately 2 inches.
- F. Apply bituminous primer and dampproofing.

3.8. TESTING FOR QUALITY ASSURANCE

- A. The Contractor shall hire and pay for the services of an independent testing laboratory to perform the testing for quality assurance.
- B. This testing shall consist of calculation of w/c ratio; measuring slump; air content; and tests for the compressive strength. Four 6-inch by 12-inch cylinders shall be made with 1 cylinder to be tested at 7 days, 2 cylinders to be tested at 28 days, and 1 cylinder to be tested at 56 days if the 28-day strengths are inadequate. These test results will be used by the Contractor to assist his control of quality.
- C. The Contractor shall schedule and provide 48 hours' notice to the independent testing laboratory. The Contractor shall provide free access to work and cooperate with the testing laboratory.
- D. In general, testing shall be required for each placement in excess of 5 cubic yards.

- E. Copies of all test reports shall be mailed directly to the Owner and Engineer by the testing laboratory as soon as they become available.
- F. The Contractor shall accept all test results reported by the testing laboratory. Any disputed results shall be validated by an independent testing laboratory hired by the Contractor at their expense.

3.9. REPAIR AT SAW CUTS TO CONCRETE

- A. After saw cutting concrete, repair exposed rebar as follows:
 - 1. Chip back concrete around rebar end with maximum 20-lb. chipping hammer.
 - 2. Cut off exposed rebar minimum 1-1/2 inches past concrete surface.
 - 3. Coat area with bonding agent and patch hole with non-shrink grout.

END OF SECTION

SECTION 16200

ELECTRICAL

GENERATOR SET

PART 1 GENERAL

1.1. Scope

- A. Provide complete factory assembled generator set equipment with digital (microprocessor-based) electronic generator set controls, digital governor, and digital voltage regulator.
- B. Provide factory test, startup by a supplier authorized by the equipment manufacturer(s), and on-site testing of the system.
- C. The generator set manufacturer shall warrant all equipment provided under this section, whether or not is manufactured by the generator set manufacturer, so that there is one source for warranty and product service. Technicians specifically trained and certified by the manufacturer to support the product and employed by the generator set supplier shall service the generator sets.
- D. The generator set supplier shall be responsible for complete compliance to all specification requirements for both the generator set and the paralleling equipment.
- E. Prototype testing, factory testing, site testing.

1.2. CODES AND STANDARDS

- A. The generator set installation and on-site testing shall conform to the requirements of the following codes and standards, as applicable. The generator set shall include necessary features to meet the requirements of these standards.
 - 1. ANSI S1.13-1971—Measurement of Sound Pressure Levels in Air
 - 2. CSA 282, 1989 Emergency Electrical Power Supply for Buildings
 - 3. IEEE446 – Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
 - 4. NFPA 30 – Flammable and Combustible Liquids
 - 5. NFPA 37 – Standard For the Installation and Use of Stationary Combustion Engines and Gas Turbines NFPA 70 – National Electrical Code. Equipment shall be suitable for use in systems in compliance to Article 700, 701, and 702.
 - 6. NFPA 99 – Essential Electrical Systems for Health Care Facilities
 - 7. NFPA 110 – Emergency and Standby Power Systems. The generator set shall meet all requirements for Level 1 systems. Level 1 prototype tests required by this standard shall have been performed on a complete and functional unit, component level type tests will not substitute for this requirement.

- B. The generator set and supplied accessories shall meet the requirements of the following standards:
 - 1. NEMA MG1-1998 part 32. Alternator shall comply with the requirements of this standard.
 - 2. UL1236 – Battery Chargers
 - 3. UL2200. The generator set shall be listed to UL2200 or submit to an independent third party certification process to verify compliance as installed.
- C. The control system for the generator set shall comply with the following requirements.
 - 1. CSA C22.2, No. 14 – M91 Industrial Control Equipment.
 - 2. EN50082-2, Electromagnetic Compatibility – Generic Immunity Requirements, Part 2: Industrial.
 - 3. EN55011, Limits and Methods of Measurement of Radio Interference Characteristics of Industrial, Scientific and Medical Equipment.
 - 4. FCC Part 15, Subpart B.
 - 5. IEC8528 part 4. Control Systems for Generator Sets
 - 6. IEC Std 801.2, 801.3, and 801.5 for susceptibility, conducted, and radiated electromagnetic emissions.
- D. The generator set manufacturer shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying quality assurance in design/development, production, installation, and service, in accordance with ISO 9001.

1.3. ACCEPTABLE MANUFACTURERS

- A. Equipment specifications for this project are based on microprocessor-based generator sets manufactured by Kohler Power Generation. Equipment by other suppliers that meets the requirement of this specification are acceptable. Proposals must include a line by line compliance statement based on this specification.

1.4. SUBMITTALS

- A. Shop drawings:
 - 1. Outline drawings of assembly.
 - 2. One line diagrams and wiring diagrams for assembly and components.
 - 3. Interconnection wiring diagrams.
 - 4. Submit names, experience level, training certifications, and locations for technicians that will be responsible for servicing equipment at this site.

- B. Product data
:
 - 1. Technical data on all major components. Technical data must include an alternator thermal damage curve, description and operating characteristics of the alternator protection device, and an alternator reactive capability curve.
 - 2. Certification of the emissions performance of the generator set engine by the engine manufacturer.
 - 3. Seismic certification, as required.
- C. Project information:
 - 1. Test reports and certifications.
 - 2. Factory test procedures.
- D. Contract closeout information:
 - 1. Operating and maintenance data.

1.5. QUALIFICATIONS

- A. The generation set manufacturer shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying quality assurance in design/development, production, installation, and service, in accordance with ISO 9001.
- B. The manufacturer of this equipment shall have produced similar equipment for a minimum period of ten years. When requested by the Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

1.6. REGULATORY REQUIREMENTS

- A. The generator set shall be UL2200 listed and labeled.
- B. The generator set overcurrent protection shall be UL listed as a utility grade protective device.
- C. The generator set engine shall comply with all applicable emissions standards at the date of installation.

1.7. WARRANTY

- A. The manufacturer shall warrant the material and workmanship of the generator set for a minimum of two (2) year from registered commissioning and start-up, or eighteen (18) months from date of shipment.
- B. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc. shall be allowed during the minimum noted warranty period described in paragraph A above.

1.8. OPERATION OF EXISTING FACILITIES

- A. Normal operations of the existing facilities will be performed by Owner. Only Owner's staff is allowed to operate existing facilities including equipment, valves, gates, motor controls, etc.
1. Provide Owner and Engineer a minimum of five working days written notice of necessary operation of existing valves, pumps, or equipment to facilitate construction activities.
 2. Contractor's activities shall not disrupt Owner's access to operate and maintain existing equipment and facilities. Contractor shall furnish any temporary access required, including ladders, which shall comply with OSHA laws and regulations, for necessary operations.
 3. Contractor's operations shall not disrupt access to existing properties and buildings.
 4. Existing isolation valves shown on Drawings or identified in the field shall not be relied upon to be operable. Contractor is responsible for isolating lines where necessary or where called for by Engineer.

PART 2. PRODUCTS

2.1 GENERATOR SET

A. Ratings

1. The generator sets shall operate at 1800 rpm and at a voltage of: 120/208, Volts AC, Three phase, 4 wire, 60 hertz.
2. The complete diesel fueled generator sets shall be rated per ISO8528 as follows:
 - a. Water Plant - Model 100REOZJF – 100KW/125 KVA.
Standby, based on site conditions of: Altitude 1100 feet, ambient temperatures of 104 degrees F, based on temperature measured at the control for indoor installations, and measured at the air inlet closest to the alternator for outdoor equipment.
3. The generator set rating shall be based on emergency/standby service and marked as such per NFPA110.

B. PERFORMANCE

1. Voltage regulation shall not exceed one percent for any constant load between no load and rated load for both parallel and non-parallel applications. Random voltage variation with any steady load from no load to full load shall not exceed plus or minus 0.5 percent.
2. Frequency regulation shall be isochronous from steady state no load to steady state rated load. Random frequency variation with any steady load from no load to full load shall not exceed plus or minus 0.25%.
3. Cooling system performance (indoor statement and outdoor statement).
4. The diesel engine generator set shall be capable of single step load pick up of 100% nameplate kW and power factor, less applicable derating factors, with the engine generator set at operating temperature.

5. The generator set shall be capable of sustaining a minimum of 90% of rated no load voltage with the specified kVA load at near zero power factor applied to the generator set.
6. The alternator shall produce a clean AC voltage waveform, with not more than 5% total harmonic distortion at full linear load, when measured from line to neutral, and with not more than 3% in any single harmonic, and no 3rd order harmonics or their multiples. Telephone influence factor shall be less than 40.
7. The generator set shall be certified by the engine manufacturer to be suitable for use at the installed location and rating, and shall meet all applicable exhaust emission requirements at the time of commissioning.
8. The generator set, complete with weather tight sound attenuated enclosure, shall be tested by the generator set manufacturer per ANSI S1.13. Data documenting performance shall be provided with submittal documentation.
9. The generator shall have a tank sized to provide 48-hours of run-time.

C. CONSTRUCTION

1. The engine generator set shall be mounted on a heavy-duty steel base to maintain alignment between components. The base shall incorporate a battery tray with hold-down clamps within the rails.
2. All switches, lamps, and meters in the control system shall be oil tight and dust tight. There shall be no exposed points in the control (with the door open) that operate in excess of 50 volts.
3. All outdoor equipment shall be enclosed with corrosion-protected materials. Steel components used in enclosures shall be powder coated and baked, and shall provide fade and corrosion resistance in compliance to Dry film thickness shall be shd3363 of 2H+all a minimum of 1.8 Mils, gloss at 60degrees per ASTM D523 of 80+/- 10, pencil hardness per ASTM D3363.
4. The generator enclosure shall have a sub base fuel cell to hold fuel for 48 hours of continuous operation at full load. The fuel cell shall comply with all codes and regulations. At minimum the fuel cell shall be double wall with leak detection.

D. CONNECTIONS

1. The generator set load connections shall be composed of silver or tin-plated copper bus bars, drilled to accept mechanical or compression terminations of the number and type as shown on the drawings. Sufficient lug space shall be provided for
2. Use with cables of the number and size as shown on the drawings.
3. Power connections to auxiliary devices shall be made at the devices, with required protection located at a wall-mounted common distribution panel.
4. Generator set control interfaces to other system components shall be made on a common, permanently labeled terminal block assembly.

2.2 ENGINE AND ENGINE EQUIPMENT

A. The engine shall be diesel, 4 cycle, radiator and fan cooled. The horsepower rating of the Essex Water Treatment Plant Upgrade Project

engine at its minimum tolerance level shall be sufficient to drive the alternator and all connected accessories. Two cycle engines are not acceptable.

- B. An electronic governor system shall provide automatic isochronous frequency regulation. The governing system dynamic capabilities shall be controlled as a function of engine coolant temperature to provide fast, stable operation at varying engine operating temperature conditions. The control system shall actively control the fuel rate and excitation as appropriate to the state of the generator set. Fuel rate shall be regulated as a function of starting, accelerating to start disconnect speed, accelerating to rated speed, and operating in various isochronous or parallel states.
- C. Skid mounted radiator and cooling system rated for full load operation in 50 degrees C ambient as measured at the generator air inlet, based on 0.5 in H₂O external static head. Radiator shall be sized based on a core temperature which is 10C higher than the rated operation temperature, or prototype tested to verify cooling performance of the engine/radiator/fan operation in a controlled environment. Radiator shall be provided with a duct adapter flange. The cooling system shall be filled with a 50/50-ethylene glycol/water mixture by the equipment manufacturer. Rotating parts shall be guarded against accidental contact.
- D. Electric starters capable of three complete cranking cycles without overheating.
- E. Positive displacement, mechanical, full pressure, lubrication oil pump.
- F. Full flow lubrication oil filters with replaceable spin on canister elements and dipstick oil level indicator.
- G. An engine driven, mechanical, positive displacement fuel pump. Fuel filter with replaceable spin on canister element. Fuel cooler, suitable for operation of the generator set at full rated load in the ambient temperature specified shall be provided if required for operation due to the design of the engine and the installation.
- H. Replaceable dry element air cleaner with restriction indicator.
- I. Flexible supply and return fuel lines.
- J. Engine mounted battery charging alternator, 40-ampere minimum, and solid state voltage regulator.
- K. Coolant heater
 - 1. Engine mounted, thermostatically controlled, coolant heater(s) for each engine. Heater voltage shall be as shown on the project drawings. The coolant heater shall be UL499 listed and labeled.
 - 2. The coolant heater shall be installed on the engine with SAEJ20 compliant materials. Steel tubing shall be used for connections into the engine coolant system wherever the length of pipe run exceeds 12 inches. The coolant heater installation shall be specifically designed to provide proper venting of the system. The coolant heaters shall be installed using isolation valves to isolate the heater for replacement of the heater element. The design shall allow the heater element to be replaced without draining the engine cooling system or significant coolant loss.
 - 3. The coolant heater shall be provided with a 24VDC thermostat, installed at the engine thermostat housing. An AC power connection shall be provided for a single AC power connection to the coolant heater system.
 - 4. The coolant heater(s) shall be sized as recommended by the engine manufacturer

to warm the engine to a minimum of 40C in a 15C ambient, in compliance with NFPA110 requirements, as a minimum, or the temperature required for starting and load pickup requirements of this specification.

- L. Provide vibration isolators, spring/pad type, quantity as recommended by the generator set manufacturer. Isolators shall include seismic restraints if required by site location.
- M. Starting and Control Batteries shall be lead acid type, 24 volt DC, sized as recommended by the engine manufacturer for compliance to NFPA110 starting requirements, complete with battery cables and connectors.
- N. Provide exhaust silencer(s) for each engine of size and type as recommended by the generator set manufacturer and approved by the engine manufacturer. The mufflers shall be critical grade. Exhaust system shall be installed according to the engine manufacturer's recommendations and applicable codes and standards.
- O. Provide a fully regulated, constant voltage, current limited, multi-rate battery charger(s) for each generator set. The chargers shall be designed for heavy-duty industrial service, primarily to quickly recharge and maintain batteries that start internal combustion engines. Charger shall be rated a minimum of 12 amps, and be capable of operating in parallel with another like charger for reliability and added charging capacity.
 - 1. Charger shall provide 4 distinct charge states: "dead battery", "bulk charge", "absorption", and "float". Charge rate shall be temperature compensated to provide proper charging in ambient conditions from -20 to +55C.
 - 2. Provide LED indication of general charger condition, including charging, fault, and equalize. Provide a 2 line LCD display to indicate charge rate, battery voltage, faults, and provide for charger set up. Charger shall provide relay contacts for fault conditions as required by NFPA110.
 - 3. The charger shall operate properly during fault conditions, including battery disconnection while charging, reversed battery polarity connections, and shorted battery.
 - 4. The charger shall be compliant to the same RFI/EMI and voltage surge performance as are specified for the genset control.

P. OUTDOOR WEATHER-PROTECTIVE LEVEL 1 SOUND ENCLOSURE

- 1. The generator set shall be provided with an outdoor enclosure, with the entire package listed under UL2200. The package shall comply with the requirements of the National Electrical Code for all wiring materials and component spacing. The total assembly of generator set, enclosure, and sub-base fuel tank (when used) shall be designed to be lifted into place using spreader bars.
- 2. Housing shall provide ample airflow for generator set operation at rated load in an ambient temperature of 100F. The housing shall have hinged access doors as required to maintain easy access for all operating and service functions. All doors shall be lockable, and include retainers to hold the door open during service. Enclosure roof shall be cambered to prevent rainwater accumulation. Openings shall be screened to limit access of rodents into the enclosure. All electrical power and control interconnections shall be made within the perimeter of the enclosure.
- 3. All sheet metal shall be primed for corrosion protection and finish painted with the manufacturers' standard color using a two-step electrocoating paint process, or equal meeting the performance requirements specified below. All surfaces of all metal parts shall be primed and painted. The painting process shall result in a coating that meets the following requirements:

Primer thickness, 0.5-2.0 mils. Top coat thickness, 0.8-1.2 mils. Gloss, per ASTM D523-89, 80% plus or minus 5%. Gloss retention after one year shall exceed 50%.

Crosshatch adhesion, per ASTM D3359-93, 4B-5B.

Impact resistance, per ASTM D2794-93, 120-160 inch-pounds.

Salt Spray, per ASTM B117-90, 1000+ hours.

Humidity, per ASTM D2247-92, 1000+ hours.

Water Soak, per ASTM D2247-92, 1000+ hours

Painting of hoses, clamps, wiring harnesses, and other non-metallic service parts shall not be acceptable. Fasteners used shall be corrosion resistant, and designed to minimize marring of the painted surface when removed for normal installation or service work.

4. Enclosure shall be constructed of minimum 12 gauge steel for framework and 14 gauge steel for panels. All hardware and hinges shall be stainless steel.
5. A factory-mounted exhaust silencer shall be installed inside the enclosure. The exhaust shall exit the enclosure through a rain collar and terminate with a rain cap. Exhaust connections to the generator set shall be through seamless flexible connections.
6. The enclosure shall include the following maintenance provisions:
Flexible coolant and lubricating oil drain lines, that extend to the exterior of the enclosure, with internal drain valves

2.3 LOW VOLTAGE AC ALTERNATOR

- A. The AC alternator shall be; synchronous, four pole, 2/3 pitch, brushless, revolving field, drip-proof construction, single pre-lubricated sealed bearing, air cooled by a direct drive centrifugal blower fan, and directly connected to the engine with flexible drive disc. The alternator design shall prevent shaft current from flowing and eliminate the need for insulated bearings. All insulation system components shall meet NEMA MG1 requirements for Class H insulation systems. Actual temperature rise measured by resistance method at full load shall not exceed 105 deg C in a 40 deg C ambient.
- B. The alternator shall be capable of delivering rated output (kVA) at rated frequency and power factor, at any voltage up to 5 percent above or below rated voltage.
- C. The alternator shall be supplied with a dedicated, independent power source for the voltage regulation system, which provides sufficient excitation for the alternator to supply 300% of rated output current for 10 seconds.

2.4 GENERATOR SET CONTROL

The generator set shall be provided with a microprocessor-based control system that is designed to provide automatic starting, monitoring and protection and control functions for the generator set. The control system shall also be designed to allow local monitoring and control of the generator set, and remote monitoring and control as described in this specification. The control shall be mounted on the generator set. The control shall be vibration isolated and prototype tested to verify the durability of all components in the system under the vibration conditions encountered. The generator set mounted control shall include the following features and functions:

- A. Control Switches
 1. Mode Select Switch. The mode select switch shall initiate the following control modes. When in the RUN or Manual position the generator set shall start, and accelerate to rated speed and voltage as directed by the operator. In the OFF position the generator set shall immediately stop, bypassing all time delays. In the AUTO position the generator set shall be ready to accept a signal from a remote device to start and accelerate to rated speed and voltage.
 2. EMERGENCY STOP switch. Switch shall be Red "mushroom head" push button. Depressing the emergency stop switch shall cause the generator set to immediately shut down, and be locked out from automatic restarting. The switch shall include a lockout provision for use in safely disabling the generator set for necessary service.
 3. RESET switch. The RESET switch shall be used to clear a fault and allow restarting the generator set after it has shut down for any fault condition.

4. PANEL LAMP switch. Operating the panel lamp switch shall cause the entire panel to be lighted with DC control power. The panel lamps shall automatically be switched off 10 minutes after the switch is operated, or after the switch is operated a second time.
 5. Voltage and Frequency Adjustment. The genset mounted control shall include digital raise/lower switches for adjustment of voltage and frequency.
- B. Generator Set AC Output Metering. The generator set shall be provided with a metering set including the following features and functions:
- a. Analog voltmeter, ammeter, frequency meter, and kilowatt (KW) meter. Voltmeter and ammeter shall display all three phases. Ammeter and KW meter scales shall be color coded in the following fashion: readings from 0-90% of generator set standby rating: green; readings from 90-100% of standby rating: amber; readings in excess of 100%: red.
 - b. Digital metering set, 0.5% accuracy, to indicate generator RMS voltage and current, frequency, output current, output KW, KW-hours, and power factor. Generator output voltage shall be available in line-to-line and line-to-neutral voltages, and shall display all three phase voltages (line to neutral or line to line) simultaneously.
 - c. Both analog and digital metering are required. The analog and digital metering equipment shall be driven by a single microprocessor, to provide consistent readings and performance.
- C. Generator Set Alarm and Status Display.
- a. The generator set shall be provided with alarm and status indicating lamps to indicate non-automatic generator status, and existing warning and shutdown conditions. The lamps shall be high-intensity LED type. The lamp condition shall be clearly apparent under bright room lighting conditions. The generator set control shall indicate the existence of all alarm, shutdown, and status conditions associated with the generator set, including all paralleling control functions and the engine ECM on an alphanumeric display on the genset. The following alarm, shutdown, and status conditions are required, as a minimum:
 - low oil pressure (alarm)
 - low oil pressure (shutdown)
 - oil pressure sender failure (alarm)
 - low coolant temperature (alarm)
 - high coolant temperature (alarm)
 - high coolant temperature (shutdown)
 - engine temperature sender failure (alarm)
 - low coolant level (alarm or shutdown--selectable)
 - fail to crank (shutdown)
 - fail to start/overcrank (shutdown)
 - overspeed (shutdown)
 - low DC voltage (alarm)
 - high DC voltage (alarm)
 - weak battery (alarm)
 - high AC voltage (shutdown)
 - low AC voltage (shutdown)
 - under frequency (shutdown)
 - over current (warning)
 - over current (shutdown)
 - short circuit (shutdown)
 - ground fault (alarm)
 - over load (alarm)
 - emergency stop (shutdown)

2. Provisions shall be made for indication of four customer-specified alarm or shutdown conditions. Labeling of the customer-specified alarm or shutdown conditions shall be of the same type and quality as the above specified conditions. The non-automatic indicating lamp shall be red, and shall flash to indicate that the generator set is not able to automatically respond to a command to start from a remote location.

D. Engine Status Monitoring.

- a. The following information shall be available from a digital status panel on the generator set control :

Engine oil pressure (psi or kPA)
engine coolant temperature (degrees F or C)
engine oil temperature (degrees F or C)
engine speed (rpm)
number of hours of operation (hours)
number of start attempts
battery voltage (DC volts)

2. The control system shall also incorporate a data logging and display provision to allow logging of a minimum of the last 20 warning or shutdown indications on the generator set, the time of the last fault of each type, and the number of faults of each type, and total time of operation at various loads as a percent of the standby rating of the generator set.

ii. Engine Control Functions.

- a. The control system provided shall include a cycle cranking system, which allows for user selected crank time, rest time, and # of cycles. Initial settings shall be for 3 cranking periods of 15 seconds each, with 15-second rest period between cranking periods.
- b. The control system shall include an engine governor control, which functions to provide steady state frequency regulation as noted elsewhere in this specification. The governor control shall include adjustments for gain, damping, and a ramping function to control engine speed and limit exhaust smoke while the unit is starting. The governor control shall be suitable for use in paralleling applications without component changes.
3. The control system shall include time delay start (adjustable 0-300 seconds) and time delay stop (adjustable 0-600 seconds) functions.
4. The control system shall include sender failure monitoring logic for speed sensing, oil pressure, and engine temperature which is capable of discriminating between failed sender or wiring components, and an actual failure conditions.

iii. Alternator Control Functions:

- a. The generator set shall include an automatic microprocessor-based voltage regulation system that is matched and prototype tested by the engine manufacturer with the governing system provided. It shall be immune from misoperation due to load-induced voltage waveform distortion and provide a pulse width modulated output to the alternator exciter. The voltage

regulation system shall be equipped with three-phase RMS sensing and shall control buildup of AC generator voltage to provide a linear rise and limit overshoot. The voltage regulation system shall be based on a full wave rectified input, pulse-width modulated output design. The system shall include a torque-matching characteristic, which shall reduce output voltage in proportion to frequency below an adjustable frequency threshold. The voltage regulator shall include adjustments for gain, damping, and frequency roll-off. Adjustments shall be broad range, and made via digital raise-lower switches, with an alphanumeric LED readout to indicate setting level. Rotary potentiometers for system adjustments are not acceptable.

- b. Controls shall be provided to monitor the output current of the generator set and initiate an alarm (over current warning) when load current exceeds 110% of the rated current of the generator set on any phase for more than 60 seconds. The controls shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator (over current shutdown). The protective functions provided shall be in compliance to the requirements of NFPA70 article 445.
 3. Controls shall be provided to individually monitor all three phases of the output current for 1, 2, or 3-phase short circuit conditions. The control/protection system shall monitor the current level and voltage. The controls shall shut down and lockout the generator set when output current level approaches the thermal damage point of the alternator (short circuit shutdown).
 4. Controls shall be provided to monitor the KW load on the generator set, and initiate an alarm condition (over load) when total load on the generator set exceeds the generator set rating for in excess of 5 seconds. Controls shall include a load shed control, to operate a set of dry contacts (for use in shedding customer load devices) when the generator set is overloaded.
 5. An AC over/under voltage monitoring system that responds only to true RMS voltage conditions shall be provided. The system shall initiate shutdown of the generator set when alternator output voltage exceeds 110% of the operator-set voltage level for more than 10 seconds, or with no intentional delay when voltage exceeds 130%. Under voltage shutdown shall occur when the output voltage of the alternator is less than 85% for more than 10 seconds.
 6. A battery monitoring system shall be provided which initiates alarms when the DC control and starting voltage is less than 25VDC or more than 32 VDC. During engine cranking (starter engaged), the low voltage limit shall be disabled, and if DC voltage drops to less than 14.4 volts for more than two seconds a "weak battery" alarm shall be initiated.
 7. The control System shall include a ground fault monitoring relay. The relay shall be adjustable from 3.8-1200 amps, and include adjustable time delay of 0-10.0 seconds. The relay shall be for indication only, and not trip or shut down the generator set. Note bonding and grounding requirements for the generator set, and provide relay that will function correctly in system as installed.
- iv. The generator set shall be provided with a network communication module to allow real time communication with the generator set control by remote devices. The control shall communicate all engine and alternator data; alarm, shutdown and status conditions; and allow starting and stopping of the generator set via the network in both test and emergency modes.

Provide a 20-light LED type remote alarm annunciator with horn, located as shown on the drawings or in a location that can be conveniently monitored by facility personnel. The remote annunciator shall provide all the audible and visual alarms called for by NFPA Standard 110 for level 1 systems; and in addition shall provide indications for high battery voltage, low battery voltage, loss of normal power to the charger. Spare lamps shall be provided to allow future addition of other alarm and status functions to the annunciator.

Provisions for labeling of the annunciator in a fashion consistent with the specified functions shall be provided. Alarm silence and lamp test switch(es) shall be provided. LED lamps shall be replaceable, and indicating lamp color shall be capable of changes needed for specific application requirements. Alarm horn shall be switchable for all annunciation points. Alarm horn (when switched on) shall sound for first fault, and all subsequent faults, regardless of whether first fault has been cleared, in compliance with NFPA110 3-5.6.2.

- v. The generator set shall be provided with a utility grade relay, designed to provide thermal overload protection for the alternator, and performance certified for that purpose by a 3rd party testing organization. The supplier shall submit time overcurrent characteristic curves and thermal damage curve for the alternator, demonstrating the effectiveness of the protection provided. Relay shall be installed to allow shutdown of the generator excitation system on an alternator overload condition, with the engine operating for a cool-down period before shutdown. The relay shall not include an instantaneous trip function.
- vi. Control Interfaces for Remote Monitoring:
 - 1. No field connections for control devices shall be made in the AC power output enclosure. Provide the following features in the control system:
 - 2. Form "C" dry contact set rated 2A @ 30VDC to indicate existence of any alarm or shutdown condition on the generator set.
 - 3. One set of contacts rated 2A @ 30VDC to indicate generator set is ready to load. The contacts shall operate when voltage and frequency are greater than 90% of rated condition.
 - 4. A fused 10 amp switched 24VDC power supply circuit shall be provided for customer use. DC power shall be available from this circuit whenever the generator set is running.
 - 5. A fused 20 amp 24VDC power supply circuit shall be provided for customer use. DC power shall be available from this circuit at all times from the engine starting/control batteries.
 - 6. The control shall be provided with a direct serial communication link for the communication network interface as described elsewhere in this specification and shown on the drawings.

PART 3. OTHER REQUIREMENTS

1.01 Prototype Testing (submit evidence of prototype testing; manufacturer's certificate etc.)

1.02 Factory Testing.

- A. The generator set manufacturer shall perform a complete operational test on the generator set prior to shipping from the factory. A certified test report shall be provided. All testing shall be performed with calibrated metering.
- B. Generator set factory tests on the equipment shall be performed at rated load and rated power factor. Generator sets that have not been factory tested at rated power factor will not be acceptable. Tests shall include:

1.03 Installation

- A. Equipment shall be installed by the Electrical contractor in accordance with final submittals and contract documents. Installation shall comply with applicable state and local codes as required by the authority having jurisdiction. Install equipment in accordance with manufacturer's instructions and instructions included in the listing or labeling of UL listed products.
- B. Installation of equipment shall include furnishing and installing all interconnecting wiring between all major equipment provided for the on-site power system. The contractor shall also perform interconnecting wiring between equipment sections (when required), under the supervision of the equipment supplier.
- C. Equipment shall be installed on concrete housekeeping pads. Equipment shall be permanently fastened to the pad in accordance with manufacturer's instructions and seismic requirements of the site.
- D. Equipment shall be initially started and operated by representatives of the manufacturer. All protective settings shall be adjusted as instructed by the consulting engineer.
- E. All equipment shall be physically inspected for damage. Scratches and other installation damage shall be repaired prior to final system testing. Equipment shall be thoroughly cleaned to remove all dirt and construction debris prior to initial operation and final testing of the system.
- F. On completion of the installation by the electrical contractor,
the generator set supplier shall conduct a site evaluation to verify that the equipment is installed per manufacturer's recommended practice.

1.04 On-Site Acceptance Test:

- A. The complete installation shall be tested to verify compliance with the performance requirements of this specification following completion of all site work. Testing shall be conducted by representatives of the manufacturer, with required fuel supplied by Contractor. The Engineer shall be notified in advance and shall have the option to witness the tests. The generator set manufacturer shall provide a site test specification covering the entire system. Tests shall include:
- B. Prior to start of active testing, all field connections for wiring, power conductors, and bus bar connections shall be checked for proper tightening torque.
- C. Installation acceptance tests to be conducted on-site shall include a "cold start" test, a two-hour full load (resistive) test, and a one-step rated load pickup test in accordance with NFPA 110. Provide a resistive load bank and make temporary connections for full load test, if necessary.
- D. Perform a power failure test on the entire installed system. This test shall be conducted by opening the power supply from the utility service, and observing proper operation of the system. Coordinate timing and obtain approval for start of test with site personnel.
- E. The generator set supplier shall issue a test report documenting the results of testing, and including a complete list of all settings in the control system.

1.05 Training

- A. The equipment supplier shall provide training for the facility operating personnel covering operation and maintenance of the equipment provided. The training program shall be not less than 4 hours in duration and the class size shall be limited to 5 persons. Training date shall be coordinated with the facility owner.

1.06 Service and Support

- A. **The generator set supplier shall maintain service parts inventory for the entire power system at a central location which is accessible to the service location 24 hours per day, 365 days per year. The manufacturer of the generator set shall maintain a**

central parts inventory to support the supplier, covering all the major components of the power system, including engines, alternators, control systems, paralleling electronics, and power transfer equipment.
- B. The generator set shall be serviced by a local service organization that is trained and factory certified in generator set service. The supplier shall maintain an inventory of critical power system replacement parts in the local service location. Service vehicles shall be stocked with critical replacement parts. The service organization shall be on call 24 hours per day, 365 days per year.
- C. The manufacturer shall maintain model and serial number records of each generator set provided for at least 20 years.

PART 4 PAYMENT

Payment for this Section shall be included in Contract No. TE-2020-E.

END OF SECTION

SECTION 16202
AUTOMATIC TRANSFER SWITCHES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes transfer switches rated 600 V and less, including the following:

- 1) Automatic transfer switches

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, weights, operating characteristics, furnished specialties, and accessories.

- 1) Technical data on all major components of all transfer switches and other products described in this section. Data is required for the transfer switch mechanism, control system, cabinet, and protective devices specifically listed for use with each transfer switch. Include steady state and fault current ratings, weights, operating characteristics, and furnished specialties and accessories.

- 2) Single-Line Diagram: Show connections between transfer switch, bypass/isolation switch, power sources, and load; and show interlocking provisions for each combined transfer switch and bypass/isolation switch.

- B. Shop Drawings: Dimensioned plans, elevations, sections, and details showing minimum clearances, conductor entry provisions, gutter space, installed features and devices, and material lists for each switch specified.

- 1) Dimensioned outline drawings of assembly, including elevations, sections, and details including minimal clearances, conductor entry provisions, gutter space, installed features and devices and material lists for each switch specified.

- 2) Internal electrical wiring and control drawings.

- 3) Interconnection wiring diagrams, showing recommended conduit runs and point-to-point terminal connections to generator set.

- 4) Installation and mounting instructions, including information for proper installation of equipment to meet seismic requirements.

- C. Manufacturer and Supplier Qualification Data

1)The transfer switch manufacturer shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying quality assurance in design/development, production, installation, and service, in accordance with ISO 9001.

2)The manufacturer of this equipment shall have produced similar equipment for a minimum period of 10 years. When requested, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

D. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

1)Features and operating sequences, both automatic and manual.

2)List of all factory settings of relays, timers and protective devices; provide setting and calibration instructions where applicable.

E. Warranty documents demonstrating compliance with the project's contract requirements.

1.4 QUALITY ASSURANCE

A. Only approved bidders shall supply equipment provided under this contract.

B. Manufacturer Qualifications: The equipment supplier shall maintain a service center capable of providing training, parts, maintenance and emergency repairs to equipment, including transfer switch generator sets and remote monitoring equipment (if applicable).

1)The transfer switch shall be serviced by technicians employed by, and specially trained and certified by, the generator set supplier and the supplier shall have a service organization

that is factory-certified in both generator set and transfer switch service. The supplier shall maintain an inventory of critical replacement parts at the local service organization, and in service vehicles. The service organization shall be on call 24 hours per day, 365 days per year.

2)The manufacturer shall maintain model and serial number records of each transfer switch provided for at least 20 years.

C. Source Limitations: All transfer switches are to be obtained through one source from a single manufacturer. The generator set manufacturer shall warrant transfer switches to provide a single source of responsibility for products provided.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked as suitable for use in emergency, legally required or optional standby use as appropriate for the connected load.

E. The automatic transfer switch installation and application shall conform to the requirements of the following codes and standards:

- 1) Transfer switches and enclosures shall be UL 1008 listed and labeled as suitable for use in emergency, legally required, and optional standby applications.
- 2) CSA 282, Emergency Electrical Power Supply for Buildings, and CSA C22.2, No. 14-M91 Industrial Control Equipment
- 3) NFPA 70, National Electrical Code. Equipment shall be suitable for use in systems in compliance with Articles 700, 701 and 702.
- 4) Comply with NEMA ICS 10-1993 AC Automatic Transfer Switches
- 5) IBC 2006 – The transfer switch(es) shall be prototype-tested and third-party certified to comply with the requirements of IBC group III or IV, Category D/F. The equipment shall be shipped with the installation instructions necessary to attain installation compliance
- 6) IEEE 446 – Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
- 7) EN55011, Class B Radiated Emissions and Class B Conducted Emissions
- 8) IEC 1000-4-5 (EN 61000-4-5); AC Surge Immunity
- 9) IEC 1000-4-4 (EN 61000-4-4) Fast Transients Immunity
- 10) IEC 1000-4-2 (EN 61000-4-2) Electrostatic Discharge Immunity
- 11) IEC 1000-4-3 (EN 61000-4-3) Radiated Field Immunity
- 12) IEC 1000-4-6 Conducted Field Immunity
- 13) IEC 1000-4-11 Voltage Dip Immunity
- 14) IEEE 62.41, AC Voltage Surge Immunity
- 15) IEEE 62.45, AC Voltage Surge Testing

F. Comply with NFPA 99 – Essential Electrical Systems for Healthcare Facilities

G. Comply with NFPA 110 – Emergency and Standby Power Systems. The transfer switch shall meet all requirements for Level 1 systems, regardless of the actual circuit level.

- H. The manufacturer shall warrant the material and workmanship of the transfer switch equipment for a minimum of one (2) year from registered commissioning and start-up, or eighteen (18) months from date of shipment.
- I. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, and etc. during the minimum noted warranty period described above.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Kohler
 - 2) Russ Electric
 - 3) ASCO
- B. Equipment specifications for this Project are based on automatic transfer switches manufactured by Kohler Power System. Switches manufactured by Russ Electric or ASCO that meet the requirement of this specification are acceptable, if approved not less than two weeks before scheduled bid date. Proposals must include a line-by-line compliance statement based on this specification.
- C. Transfer switches utilizing molded case circuit breakers do not meet the requirements of this specification and will not be accepted.

2.2 GENERAL TRANSFER-SWITCH PRODUCT REQUIREMENTS

- A. Provide a transfer switch to be sized by generator vendor. Apply as defined in UL 1008 for continuous loading and total system transfer.
- B. Fault-Current Closing and Withstand Ratings: UL 1008 WCR ratings must be specifically listed as meeting the requirements for use with protective devices at installation locations, under specified fault conditions. Withstand and closing ratings shall be based on use of the same set of contacts for the withstand test and the closing test.
- C. Solid-State Controls: All settings should be accurate to +/- 2% or better over an operating temperature range of - 40 to + 60 degrees C (- 40 to + 140 degrees F).
- D. Resistance to Damage by Voltage Transients: Components shall meet or exceed voltage-surge withstand capability requirements when tested according to IEEE C62.41. Components shall meet or exceed voltage-impulse withstand test of NEMA ICS 1.
- E. Electrical Operation: Accomplished by a non-fused, momentarily energized solenoid or electric motor operator mechanism, mechanically and electrically interlocked in both directions (except that mechanical interlock is not required for closed transition switches).

- F. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.
- 1)Switches using molded-case switches or circuit breakers, or insulated case circuit breaker components are not acceptable.
 - 2)Transfer switches shall be double-throw, electrically and mechanically interlocked, and mechanically held in the Source 1 and Source 2 positions.
 - 3)Main switch contacts shall be high-pressure silver alloy. Contact assemblies shall have arc chutes for positive arc extinguishing. Arc chutes shall have insulating covers to prevent inter-phase flashover.
 - 4)Contacts shall be operated by a high-speed electrical mechanism that causes contacts to open or close within three electrical cycles from signal.
 - 5)The transfer switch operation shall include the ability to switch to an open position (both sources disconnected) for the purpose of load shedding from the generator set.
 - 6)The power transfer mechanism shall include provisions for manual operation under load with the enclosure door closed. Manual operation may be electromechanical or mechanical, but must be coordinated with control function.
 - 7)Transfer switch shall be provided with flame retardant transparent covers to allow viewing of switch contact operation but prevent direct contact with components that could be operating at line voltage levels.
 - 8)The transfer switch shall include the mechanical and control provisions necessary to allow the device to be field-configured for operating speed. Transfer switch operation with motor loads shall be as is recommended in NEMA MG1.
 - a)Phase angle monitoring/timing equipment is not an acceptable substitute for this functionality.
 - 9)Transfer switches will be "4-pole" and shall be provided with a switched neutral pole which is switched simultaneously with phase poles.
- G. Control: Transfer switch control shall be capable of communicating with the genset control, other switches and remote programming devices over a high-speed network interface.
- H. Factory wiring: Transfer switch internal wiring shall be composed of pre-manufactured harnesses that are permanently marked for source and destination. Harnesses shall be connected to the control system by means of locking disconnect plug(s), to allow the control system to be easily disconnected and serviced without disconnecting power from the transfer switch mechanism.

- I. Terminals: Terminals shall be pressure type and appropriate for all field wiring. Terminal arrangement and cabinet space must be such that feeder conductors can enter from the top, side or bottom of the switch, at the installer's discretion. Control wiring shall be equipped with suitable lugs, for connection to terminal strips.
- J. Enclosures: All enclosures shall be third-party certified for compliance to NEMA ICS 6 and UL 508, unless otherwise indicated:
 - 1)The enclosure shall provide wire bend space in compliance to the latest version of NFPA70, regardless of the direction
from which the conduit enters the enclosure.
 - 2)Exterior cabinet doors shall provide complete protection for the system's internal components. Doors must have permanently mounted key-type latches. Bolted covers or doors are not acceptable.
 - 3)Transfer switches shall be provided in enclosures that are third party certified for their intended environment per NEMA requirements.
 - a)Transfer switches located outdoors shall be supplied in NEMA Type 3R (IEC IP34) when dust-proof and/or rain-proof enclosures are required.

2.3 AUTOMATIC TRANSFER SWITCHES

- A. Comply with requirements for Level 1 equipment according to NFPA 110.
- B. Indicated current ratings:
 - 1)Main contacts shall be rated for 600 VAC minimum.
 - 2)Transfer switches shall be rated to carry 100% of rated current continuously in the enclosure supplied, in ambient temperatures of -40 to +60 degrees C (-40 to +140 degrees F), relative humidity up to 95% (non-condensing), and altitudes up to 10,000 feet (3000 meters).
- C. Manual Switch Operation: The power transfer mechanism shall include provisions for manual operation under load with the enclosure door closed. Manual operation may be electromechanical or mechanical, but must be coordinated with control function.
- D. Control: Transfer switch control shall be provided with necessary equipment and software to communicate with the genset control, other transfer switches, remote annunciation equipment, and other devices over a high-speed control network.
- E. Neutral Switching: Transfer switches designated on the drawings as 4-pole shall be provided with a switched neutral pole. The neutral pole shall be of the same construction and have the same ratings as the phase poles. All poles shall be switched simultaneously using a common crossbar. Substitute equipment using overlapping neutral contacts is not acceptable.

- F. Provide a fully regulated, constant voltage, current limited, multi-rate battery charger(s) for each generator set. The chargers shall be designed for heavy-duty industrial service, primarily to quickly recharge and maintain batteries that start

internal combustion engines. Charger shall be rated a minimum of 12 amps, and be capable of operating in parallel with another like charger for reliability and added charging capacity.

- 1)Charger shall provide 4 distinct charge states: "dead battery", "bulk charge", "absorption", and "float". Charge rate shall be temperature compensated to provide proper charging in ambient conditions from -20 to +55C.
- 2)Provider LED indication of general charger condition, including charging, fault, and equalize. Provide a 2 line LCD display to indicate charge rate, battery voltage, faults, and provide for charger set up. Charger shall provide relay contacts for fault conditions as required by NFPA110.
- 3)The charger shall operate properly during fault conditions, including battery disconnection while charging, reversed battery polarity connections, and shorted battery.
- 4)The charger shall be compliant to the same RFI/EMI and voltage surge performance as are specified for the genset control.

G. Automatic Transfer Switch Control Features

- 1)The transfer switch control system shall be configurable in the field for any operating voltage level up to 600 VAC. Voltage sensing shall be monitored based on the normal voltage at the site. Systems that utilize voltage monitoring based on standard voltage conditions that are not field configurable are not acceptable.
- 2)All transfer switch sensing shall be configurable from an operator panel or from a Windows XP or later PC-based service tool. Designs utilizing DIP switches or other electromechanical devices are not acceptable.
- 3)The control system shall be designed and prototype tested for operation in ambient temperatures from - 40 degrees C to + 60 degrees C (- 40 to +140 degrees F). It shall be designed and tested to comply with the requirements of the noted voltage and RFI/EMI standards.
- 4)The control shall have optically isolated logic inputs, high isolation transformers for AC inputs and relays on all outputs, to provide optimum protection from line voltage surges, RFI and EMI.
- 5)The transfer switch network monitoring equipment, when supplied,

shall be provided with a battery-based auxiliary power supply to allow monitoring of the transfer switch when both AC power sources are non-operational. The battery power supply shall be monitored for proper condition, and the transfer switch shall include an alarm condition to indicate low battery condition.

- H. Transfer Switch Control Panel: The transfer switch shall have a microprocessor-based control with a sealed membrane panel incorporating pushbuttons for operator-controlled functions, and LED lamps for system status indicators. The panel shall also include an alphanumeric display for detailed system information. Panel display and indicating lamps shall include permanent labels.

1)The indicator panel LEDs shall display:

- a)Which source the load is connected to (Source 1 or Source 2)
- b)Which source or sources are available
- c)When switch is not set for automatic operation, because the control is disabled or the bypass switch is in use
- d)When the switch is in test/exercise mode

2)The indicator shall have pushbuttons that allow the operator to activate the following functions:

- a)Activate pre-programmed test sequence
- b)Override programmed delays, and immediately go to the next operation
- c)Reset the control by clearing any faults
- d)Test all of the LEDs by lighting them simultaneously

3)The alphanumeric digital display shall be vacuum fluorescent-type, clearly visible in both bright sunlight and no-light conditions over an angle of 120 degrees, and shall display the following:

- a)AC voltage for all phases, normal and emergency
- b)Source status: connected or not connected.
- c)Load data, including voltage, AC current, frequency, KW, KVA, and power factor.

4)The display panel shall be password-protected, and allow the operator to view and make adjustments:

- a)Set nominal voltage and frequency for the transfer switch
- b)Adjust voltage and frequency sensor operation set points
- c)Set up time clock functions
- d)Set up load sequence functions
- e)Enable or disable control functions including program transition
- f)View real-time clock data, operation log (hours connected, times transferred, failures) and service history.

- I. Control Functions: Functions managed by the control shall include:

1)Software adjustable time delays:

- a)Engine start (prevents nuisance genset starts in the event of momentary power fluctuation): 0 to 120 seconds (default 3 sec)
- b)Transfer normal to emergency (allows genset to stabilize before load is transferred): 0 to 120 seconds (default 3 sec)
- c)Re-transfer emergency to normal (allows utility to stabilize before load is transferred from genset): 0 to 30 minutes (default 3 sec)
- d)Engine cooldown: 0 to 30 minutes (default 10 min)
- e)Programmed transition: 0 to 60 seconds (default 3 sec)

2)Undervoltage sensing: three-phase normal, three-phase emergency source.

- a)Pickup: 85 to 98% of nominal voltage (default 90%)
- b)Dropout: 75 to 98% of nominal voltage (default 90%)
- c)Dropout time delay: 0.1 to 1.0 seconds (default 0.5 sec)
- d)Accurate to within +/- 1% of nominal voltage

3)Over-voltage sensing: three-phase normal, three-phase emergency source.

- a)Pickup: 95 to 99% of dropout setting (default 95%)
- b)Dropout: 105 to 135% of nominal voltage (default 110%)
- c)Dropout time delay: 0.5 to 120 seconds (default 3 sec)
- d)Accurate to within +/- 1% of nominal voltage

4)Over/under frequency sensing:

- a)Pickup: +/- 5 to +/-20% of nominal frequency (default 10%)
- b)Dropout: +/-1% beyond pickup (default 1%)
- c)Dropout time delay: 0.1 to 15.0 seconds (default 5 sec)
- d)Accurate to within +/- 0.2%

5)Voltage imbalance sensing:

- a)Dropout: 2 to 10% (default 4%)
- b)Pickup: 90% of dropout
- c)Time delay: 2.0 to 20 seconds (default 5 sec)

6)Phase rotation sensing:

- a)Time delay: 100 msec

7)Loss of single-phase detection:

a)Time delay: 100 msec

J. Control features shall include:

- 1)Programmable genset exerciser: A field-programmable control shall periodically start the generator, transfer the load to generator for a preset time, then re-transfer and shut down the generator after a preset cool-down period.
 - a)Push-button programming control shall have a selection of eight different schedules for exercising generator, with or without load.
- 2)In event of a loss of power to the control, all control settings, real-time clock setting and the engine start-time delay setting will be retained.
- 3)The system continuously logs information including the number of hours each source has been connected to the load, the number of times transferred, and the total number of times each source has failed. An event recorder stores information, including time and date-stamp, for up to 50 events.
- 4)Transfer Override Switch: Overrides automatic re-transfer control so automatic transfer switch will remain connected to emergency power source regardless of condition of normal source. Pilot light to indicate override status.
- 5)Front panel security key: Prevents unauthorized access to transfer or test functions

K. Control Interface

- 1)Provide one set Form C auxiliary contacts on both sides, operated by transfer switch position, rated 10 amps 250 VAC.
- 2)The transfer switch shall be provided with a network communication card, and configured to allow network-based communication with the transfer switch and other network system components, including the generator set(s) provided for the Project.
- 3)Unassigned Auxiliary Contacts: Two normally open, 1-pole, double-throw contacts for each switch position, rated 10A at 240 VAC.

L. Engine Starting Contacts

- 1)One isolated and normally closed, and one isolated and normally open; rated 10A at 32 VDC minimum.

2.4 REMOTE ANNUNCIATOR SYSTEM

- A. Functional Description: Remote annunciator panel shall annunciate conditions for indicated transfer switches. Annunciation shall include the following:

2)Sources available, as defined by actual pickup and dropout settings of transfer-switch controls.

3)Switch position.

4)Failure of communication link.

B. Annunciator Panel: LED-lamp type with audible signal and silencing switch.

1)Indicating Lights: Grouped for each transfer switch monitored.

2)Label each group, indicating transfer switch it monitors, location of switch, and identity of load it serves.

3)Mounting: Flush, modular, steel cabinet, unless otherwise indicated.

4)Lamp Test: Push-to-test or lamp-test switch on front panel.

C. Malfunction of annunciator, annunciation and control panel, or communication link shall not affect functions of automatic transfer switch. In the event of failure of communication link, automatic transfer switch automatically reverts to stand-alone, self-contained operation.

D. Automatic transfer-switch sensing, controlling, or operating function shall not depend on remote panel for proper operation.
The remote annunciation system shall not prevent transfer to the alternate source when the primary power source fails, nor prevent return to the primary source if the alternate source fails

PART 3 EXECUTION

3.1 INSTALLATION

A. Design each fastener and support to carry load indicated by seismic requirements and according to seismic-restraint details.

B. Annunciator and Control Panel Mounting: Flush in wall, unless otherwise indicated.

C. Set field-adjustable intervals and delays, relays, and engine exerciser clock.

3.2 CONNECTIONS

A. Wiring to Remote Components: Match type and number of cables and conductors to control and communication requirements of transfer

switches as recommended by manufacturer. Increase raceway sizes at no additional cost to Owner if necessary, to accommodate required wiring.

B. Field control connections shall be made on a common terminal block that is clearly and permanently labeled.

- C. Transfer switch shall be provided with AL/CU mechanical lugs sized to accept the full output rating of the switch. Lugs shall be suitable for the number and size of conductors shown on the drawings.
- D. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."
- E. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.3 SOURCE QUALITY CONTROL

- A. Prior to shipping, factory shall test and inspect components, assembled switches, and associated equipment to ensure proper operation.
- B. Factory shall check transfer time and voltage, frequency, and time-delay settings for compliance with specified requirements.
- C. Factory shall perform dielectric strength test complying with NEMA ICS 1.

3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: The supplier of the transfer switch(es) and associated equipment shall inspect, test, and adjust components, assemblies, and equipment installations, including connections, and report results in writing.
- B. Manufacturer's representative shall perform tests and inspections and prepare test reports.

- C. After installing equipment and after electrical circuitry has been energized, installer shall test for compliance with requirements.

1) Perform recommended installation tests as recommended in manufacturer's installation and service manuals.

2) After energizing circuits, demonstrate interlocking sequence and operational function for each switch.

a) Simulate power failures of normal source to automatic transfer switches and of emergency source with normal source available.

b) Verify time-delay settings.

c) Verify that the transfer switch is accurately metering AC voltage and current (when provided).

d) Test bypass/isolation unit functional modes and related automatic transfer-switch operations.

e) Verify proper sequence and correct timing of automatic engine starting, transfer time delay, retransfer time delay on restoration of normal power, and engine cool-down and shutdown.

3) Ground-Fault Tests (if integral to transfer switch): Coordinate with testing of ground-fault protective devices for power delivery from both sources.

a) Verify grounding connections and locations and ratings of sensors.

D. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each switch. Remove all access panels so joints and connections are accessible to portable scanner.

1) Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each switch 11 months after date of Substantial Completion.

2) Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

3) Record of Infrared Scanning: Prepare a certified report that identifies switches checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.5 DEMONSTRATION

A. After generator set installation, the generator and transfer switch supplier shall conduct a complete operation, basic maintenance, and emergency service seminar covering generator set and transfer switch equipment, for up to 10 people employed by the Owner.

1) The seminar shall include instruction on operation of the transfer equipment, normal testing and exercise, adjustments to the control system, use of the PC based service and maintenance tools provided under this contract, and emergency operation procedures.

2) The class duration shall be at least 8 hours in length, and include practical operation with the installed equipment.

3.6 SERVICE AND SUPPORT

A. The manufacturer shall supply the Owner with a complete set of the service and maintenance software required to support the product. The software shall be provided at a training class attended by the user, to qualify the user in proper use of the software. The software shall have the following features and capabilities:

1) The software shall be 32 bit and shall be XP and Vista compatible.

2) The software shall use the Windows Explorer format, for ease of use and commonality with other software in use at the facility.

- 3)The software shall allow adjustment of all functions described herein, adjustment of operating levels of all protective functions, and programming of all optional functions in the controller. Adjustments shall be possible over modem from a facility that is remote from the generator set.
- 4)The software shall be capable of storing and displaying data for any function monitored by the generator set control. This data shall be available in common file formats, and on graphical "strip chart" displays.
- 5)The software shall automatically record all control operations and adjustments performed by any operator or software user, for tracking of changes to the control.
- 6)The software shall display all warning, shutdown, and status changes programmed into transfer switch controller. For each event, the control shall provide information on the nature of the event, when it last occurred, and how many times it has occurred.

PART 4 PAYMENT

Payment for this Section shall be included in Contract No. TE-2020-E.

END OF SECTION

SECTION 16221
MOTORS AND MOTOR CONTROLLERS

PART 1 GENERAL

1.1 PRODUCTS

- A. Section covers work related to supplying and installing electric motors and motor controllers.
- B. Supply services from Layne Christiansen Company of Schoharie, NY to supply, install, and provide startup services for the following items:
 - 1) Well #5 motor; 250 HP Motor, 480 V, 3-phase, 60 Hz. Motor to be US Motor, Cat. # HO250V2SLH. Pump Duty Point - 3500GPM @ 220' TDH

NOTE: Transformers, VFD, control conductors and connection to power shall be supplied by electrical contracts.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Related work includes but is not limited to the following Technical Specification Sections:
 - 1) 15000 General Equipment Requirements

1.3 REFERENCES

- A. NEMA MG-1 - Motors and Generators.
- B. NEMA ICS - General Standards for Industrial Control and Systems.
- C. UL 508 - Electric Industrial Control Equipment.
- D. IEEE 519 - Recommended Practices and Requirements for Harmonic Control in Electric Power Systems.

1.4 SUBMITTALS

- A. Submittal Package: Submit the product data, and quality control submittals specified below at the same time as a package.
- B. Product Data:
 - 1. Motor Controllers: Catalog sheets, specifications, and installation instructions. Submit product data for motor controllers simultaneously with product data required for motors.
 - a. Identify each controller for use with corresponding motor.
 - b. Describe overload devices being supplied with each motor controller (include equipment manufacturer's recommendations).
 - c. Enumerate and describe all accessories being supplied with each motor controller.
 - 2. All Motors:
 - a. Catalog sheets, specifications and installation instructions.
 - b. Data proving that voltage rating of each motor is in accordance with specified NEMA standard motor voltage.
 - c. Data proving that the service factor and temperature rise for the motor's insulation system conforms to NEMA standards for each motor's specific application.
 - d. Data proving that the motor efficiency rating conforms to NEMA testing and marking standards MG1-12.54 and 12.55.

3. Additional Data for Motors Controlled by Solid State or Adjustable Speed Motor Controllers:
 - a. Data proving that the motor has been designed for use with associated controller.
 - C. Contract Closeout Submittals:
 1. Operation and Maintenance Data: Deliver 2 copies, covering the installed products, to the Engineer.
- 1.5 QUALITY ASSURANCE
- A. All supplied components shall be designed, manufactured and tested in accordance with the latest applicable standards of IEC, UL, CUL, and NEMA.
 - B. For the equipment specified herein, the manufacturer shall be ISO 9001 or 9002 certified.
 - C. The supplier of this equipment shall have produced similar electrical equipment for a minimum period of five (5) years. When requested by the Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

PART 2 PRODUCTS

2.1 MOTORS

- A. Classification:
 1. Classification According to Application: Comply with NEMA standards for general-purpose alternating-current squirrel-cage induction motors, except:
 - a. Furnish NEMA definite-purpose or special-purpose motors when required to suit the application.
 - b. Furnish NEMA type other than squirrel-cage construction when required to suit the application.
 2. Classification According to Environmental Protection and Methods of Cooling: Comply with NEMA requirements for a drip proof machine unless otherwise specified or indicated on the drawings, or required to suit the application.
- B. Efficiency: Motors shall meet or exceed efficiencies published in the NEMA Premium Efficiency Motor Program for single-speed, polyphase, 1-500 horsepower, 2, 4, and 6 pole, squirrel cage induction motors, NEMA Design A or B, continuous rated. Motors shall be stamped with a NEMA nominal efficiency rating in accordance with NEMA testing and marking standards MG1-12.54 and 12.55. The NEMA Premium efficiency levels are contained in NEMA Standards Publication MG 1-2003, in Tables 12-12 and 12-13.
- C. Motor (Nameplate) Voltage:
 1. Nominal 120/240 V, Single Phase, 3W, Premises Wiring System:
 - a. Motors Less Than 1/2 hp: NEMA standard motor voltage 115 V, single phase, 60 Hz.
 - b. Motors 1/2 hp and Larger: NEMA standard motor voltage 230 V, single phase, 60 Hz.
 2. 120/208 V, Three Phase, 4W, Premises Wiring Systems:
 - a. Motors Less Than 1 hp: NEMA standard motor voltage 115 V, single phase, 60 Hz.
 - b. Motors 1 hp and Larger: NEMA standard motor voltage 200 V, three phase, 60 Hz.

3. 277/480 V, Three Phase, 4W, Premises Wiring Systems:
 - a. Motors Less Than 1/2 hp: NEMA standard motor voltage 115 V, single phase, 60 Hz.
 - b. Motors 1/2 hp and Larger: NEMA standard motor voltage 460 V, three phase, 60 Hz.

D. Horsepower Capacity:

1. Each motor shall not be overloaded by the apparatus it operates under every condition of operation.
2. The horsepower capacity shall be the continuous rating based on the nameplate horsepower rating. (The motor may not be overloaded up to the horsepower obtained by multiplying the rated horsepower by the service factor shown on the nameplate).
3. Where a minimum horsepower capacity is listed, furnish a motor larger than the minimum, if required in a particular case.
4. Pay additional cost due to necessary increase in feeder sizes, circuit breaker sizes, etc., provided under the Electric Contract.

E. Bearings: Equip motors 1/2 hp and larger with ball bearings unless otherwise specified or indicated on the drawings.

F. Speed: As required and approved to meet the requirements of the service for which motors are intended.

G. Space Heaters: Where indicated, equip motors with space heaters and accessories to prevent condensation in the motor windings when motor is not operating. A separate circuit is required to supply the heaters.

H. Motor Winding Protection: Where indicated, equip motors with imbedded temperature measuring detectors in the windings (thermocouples or RTD) with control unit and accessories for direct reading of stator temperatures. Alarm shall sound and motor controller trip at temperature recommended by motor manufacturer.

2.2 MANUAL AND MAGNETIC MOTOR CONTROLLERS

A. Minimum Size: The minimum allowable size of single or three phase magnetic motor controller is NEMA size 0.

B. Voltage Rating: To suit system voltage.

1. For single phase motor controllers which are not produced to suit the system voltage and phases, furnish properly rated 3 phase motor controllers and utilize required number of poles for the single-phase circuit.

C. Enclosures:

1. NEMA Type: Unless otherwise indicated, furnish NEMA 1 enclosures.
2. Material: Steel construction unless otherwise indicated.
3. Type A, A1 and A2 Controllers Indicated To Be Flush Mounted: Furnish stainless steel face plates and galvanized steel recessed mounting boxes.

- D. Control Power: Furnish fused secondary control power transformer (maximum control voltage 120 volts) mounted within each magnetic motor controller enclosure.
- E. Local Control Devices:
 - 1. Manual Motor Controllers:
 - a. Type A1 Controller: In addition to the on/off switch function, furnish where indicated, a hand/auto switch or 3 position hand-off-auto switch mounted in the enclosure cover.
 - 2. Magnetic Motor Controllers: Equip controllers with push buttons, or 3 position hand-off-auto selector switch, (to suit operation) mounted in the enclosure cover.
 - a. For NEMA 1 enclosures furnish standard duty devices.
 - b. For other NEMA enclosures furnish heavy duty devices to suit the requirements of the NEMA enclosure.
- F. Pilot Lights:
 - 1. Manual Motor Controllers: Equip controllers with pilot lights (neon) mounted in the enclosure cover.
 - 2. Magnetic Motor Controllers: Equip controllers with pilot lights of the neon lamp type or transformer type, mounted in the enclosure cover.
- G. Time Delay Undervoltage Relays:
- H. Sequenced Time Delay Relays:
- I. Space Heaters: Equip magnetic motor controllers which are installed outdoors, and indoors in unheated locations, with space heaters and humidistat to prevent condensation within the housing.
- J. Overload Devices: Equip motor controllers with manual reset melting type (eutectic), or manual reset bi-metallic type standard trip overload devices (NEMA Class 20, trips in 20 seconds or less when carrying a current equal to 600 percent of its current rating). Exceptions:
 - 1. Equip motor controllers with automatic reset overload devices only where indicated.
 - 2. Equip motor controllers with fast trip overload devices when recommended by equipment manufacturer (NEMA Class 10, trips in 10 seconds or less when carrying a current equal to 600 percent of its current rating).
 - 3. Equip motor controllers with slow trip overload devices when recommended by equipment manufacturer (NEMA Class 30, trips in 30 seconds or less when carrying a current equal to 600 percent of its current rating).
 - 4. Equip motor controllers with ambient compensated overload protection where motor and relay are not in the same ambient.
 - 5. Equip motor controllers with solid state overload relays where indicated.
- K. Manual Motor Controller Types:
 - 1. Type A (Full Voltage, Non-Magnetic): Allen-Bradley Co.'s Bulletin 609, Cutler-Hammer Products' File A/B300-9115, Furnas Electric Co.'s Class 11, General Electric Co.'s CR-1062, Square D Co.'s Class 2510, Type M, or Westinghouse Electric Corp.'s Type B100.

2. Type A1 (Full Voltage, Non-Magnetic Single Phase): Allen-Bradley Co.'s Bulletin 600, Cutler-Hammer Products' File B200-9101, Furnas Electric Co.'s class 10, General Electric Co.'s CR-101, Square D Co.'s Class 2510, Type F, or Westinghouse Electric Corp.'s Type MS.
3. Type A2 (2 Speed, 2 Winding, Full Voltage, Non-Magnetic): Allen-Bradley Co.'s Bulletin 609TS, Cutler-Hammer Products' File A700, General Electric Co.'s CR-1062, or Square D Co.'s Class 2512, Type M.
4. Type A3 (2 Speed, 2 Winding, Full Voltage, Non-Magnetic, Single Phase): Allen-Bradley Co.'s Bulletin 600, Cutler-Hammer Products' File B200-9106, General Electric Co.'s CR-101, or Square D Co.'s Class 2512, Type F.

L. Magnetic Motor Controller Types:

1. Type B (Full Voltage Magnetic): Allen-Bradley Co.'s Bulletin 509, Cutler-Hammer Products' File A10-9586, Furnas Electric Co.'s Class 14, General Electric Co.'s CR-306, Square D Co.'s Class 8536, or Westinghouse Electric Corp.'s Class A200.
2. Type B-COM (Combination Full Voltage, Magnetic/Safety Switch): Allen-Bradley Co.'s Bulletin 512, Cutler-Hammer Products' File A30-9589, Furnas Electric Co.'s Class 17, General Electric Co.'s, CR-308, Square D Co.'s Class 8538, or Westinghouse Electric Corp.'s Class A203.
3. Type B2 (2 Speed, 2 Winding, Full Voltage, Magnetic): Allen-Bradley Co.'s Bulletin 530, Cutler-Hammer Products' File A700, Furnas Electric Co.'s Class 30, General Electric Co.'s CR-309, Square D Co.'s Class 8810, or Westinghouse Electric Corp.'s Class A900.
4. Type C (Automatic, Reduced Voltage Autotransformer, Magnetic): Allen-Bradley Co.'s Bulletin 570, Cutler-Hammer Products' File A400-9621, Furnas Electric Co.'s Class 36, General Electric Co.'s CR-331, Square D Co.'s, Class 8606, or Westinghouse Electric Corp.'s Class A600.
5. Type C-Com (Combination Automatic, Reduced Voltage Autotransformer, Magnetic/Safety Switch): Allen-Bradley Co.'s Bulletin 572, Cutler-Hammer Products' File A400-9621, Furnas Electric Co.'s Class 37, Square D Co.'s Class 8606, or Westinghouse Electric Corp.'s Class A603.
6. Type D (Part Winding, Magnetic): Allen-Bradley Co.'s Bulletin 530, Cutler-Hammer Products' File A460-9612, Furnas Electric Co.'s Class 36, General Electric Co.'s CR-330, Square D Co.'s Class 8640, or Westinghouse Electric Corp.'s Class A700.

M. Remote Control Stations:

1. Normal Duty: Start-Stop with pilot light unless otherwise indicated, in NEMA 1 enclosure; Allen-Bradley Co.'s Bulletin 800S, Cutler-Hammer Products' Bulletin 10250, Furnas Electric Co.'s Class 50, General Electric Co.'s CR-2943, Square D Co.'s Class 9001, or Westinghouse Electric Corp.'s Type PB1/PB2.
2. Heavy Duty: Start-Stop with pilot light unless otherwise indicated, in NEMA enclosure to suit conditions; Allen-Bradley Co.'s Bulletin 800T, Cutler-Hammer Products' 10250T, Furnas Electric Co.'s Class 52, General Electric Co.'s CR104P, Square D Co.'s Class 9001, or Westinghouse Electric Corp.'s Type PB1/PB2.

2.3 NAMEPLATES

- A. General: Precision engrave letters and numbers with uniform margins, character size minimum 3/16 inch high.
 - 1. Phenolic: Two color laminated engraver's stock, 1/16 inch minimum thickness, machine engraved to expose inner core .

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install the Work of this Section in accordance with the manufacturer's printed instructions.
- B. Nameplates: Identify each remote control station, indicating motor controlled. Identify each interlock switch, indicating purpose of switch:
 - 1. NEMA 1 Enclosures: Rivet or bolt nameplate to the cover.
 - 2. NEMA 12 Enclosures: Rivet or bolt and gasket nameplate to the cover.
 - 3. NEMA 3R, 4, 4X, 7, or 9 Enclosures: Attach nameplates to the cover using adhesive specifically designed for the purpose, or mount nameplate on wall or other conspicuous location adjacent to switch. Do not penetrate enclosure with fasteners.

3.2 REMOTE CONTROL STATION SCHEDULE

- A. Use normal duty remote control stations in dry non-hazardous locations. Use heavy duty remote control stations in all other locations.

PART 4 PAYMENT

Payment for this Section shall be included in Work Item TE-2020-E.

END OF SECTION

SECTION 16400
ELECTRICAL

PART 1 GENERAL

1.1 DESCRIPTION

- A. All locations where this specification reads "Contractor" shall mean Electrical Contractor.
- B. The Contractor shall supply and install all labor, materials, equipment, tools and services to construct and install a complete electrical and electric heat system as indicated on the contract drawings and related documents.
- C. All excavating and backfill work shall be done in accordance with the section "Excavating and Backfill". Concrete work shall conform to the section "Cast-in-Place Concrete".
- D. The Contractor shall be responsible for all line voltage power for the HVAC equipment in coordination with the HVAC Contractor and General Contractor. The HVAC Contractor will provide the Contractor with all line voltage temperature control devices for installation and final connection by the Contractor.
- E. The Contractor shall supply all interior lighting, combination motor starters, disconnect switches and receptacles as shown on the Contract Drawings.
- F. The Contractor shall supply line voltage power to all equipment as indicated on the contract documents. The HVAC contractor will provide all low voltage devices and final connections.
- G. The Contractor shall provide all line voltage power and final connections for the various instrumentation locations as indicated on the Contract Drawings. Coordinate all line voltage installations with the control systems vendor to ensure line voltage power is installed in the correct location.

1.2 SUBMITTALS

- A. Submit Shop drawings on:
 - 1. panel schedule
 - 2. distribution equipment
 - 3. lighting equipment
 - 4. motor control equipment
 - 5. a schematic of the circuit layout, with wire sizes and corresponding conduit sizes
 - 6. Ground fault protection
 - 7. Grounding system
 - 8. Panels
- B. Submit Manufacturers data on:
 - 1. Switches, conduit, fittings, receptacles
 - 2. All lighting fixtures

3. Motor control equipment
 4. Electrical heating system, thermostats
 5. Ventilation system, fans, thermostats
- C. All wiring shall conform to the standards set forth in the latter section. If there is a conflict between the specifications or drawings, the standards will govern.
- D. The Contractor shall provide FOUR (4) complete sets of bound maintenance Manuals on all electrical equipment provided, including lighting fixtures, power and lighting panels, disconnects, combination motor starters, transformers, switches, and receptacles.

1.3 WORKING DRAWINGS

- A. The Electrical Contract Drawings are for general location purposes only and are not intended for installation of wiring or for construction methods. The Contractor shall submit a set of working drawings based on the Contract Drawings. The Contractor's working drawings shall include the details of construction, dimensions, conduit and lighting layouts, wiring diagrams, power distribution, panel schedule. The drawings shall also indicate supports, hangers, construction requirements and indicate a time frame for installing all elements on the drawings.
- B. All equipment furnished and installed under other Contracts affecting the work by the Contractor shall be shown on the working drawings. It shall be the responsibility of the Contractor to coordinate with other contractors and equipment suppliers to obtain the information necessary to complete the working drawings.
- C. The working drawings shall be completed by the Contractor 15 days after the "Notice to Proceed" and must be approved by the Engineer prior commencing work under this Contract.

1.4 EQUIPMENT FINISHES

- A. All equipment shall have factory finishes. Any rust, corrosion, or damage on the installed equipment shall be rejected by the Owner.

1.5 UTILITY COMPANY APPROVAL

- A. All shop drawings that relate to the metering and utility service shall be forwarded to the utility for their approval. The Owner will review the shop drawings after the utility company has approved the document.

1.5 STANDARDS

- A. All work under this contract shall conform with the existing rules and requirements of the following.
1. National Electrical Code
 2. National Electrical Manufacturers Assoc.
 3. Institute of Electrical & Electronic Eng.
 4. Insulated Power Cable Eng. Assoc.
 5. Occupational Safety Hazards Act
 6. Local Codes and regulations

- B. All material and equipment shall bear the label of the Underwriters Laboratories.

1.6 CERTIFICATION

- A. Upon completion of the work, the Contractor shall obtain a certificate of approval from the electrical inspection agency having inspection authority. The approvals shall be delivered to the Engineer within 5 days of receipt.
- B. The costs of all permits, inspection services, fees for both temporary or permanent installation shall be paid by the Contractor and be included in his bid price.

PART 2 PRODUCTS

2.0 GENERAL

- A. The Contractor shall supply all interior lighting and receptacles as shown on the contract drawings.
- B. The Contractor shall supply line voltage power to all equipment installed by the General Contractor on the project.
- C. The Contractor shall provide three (3) complete sets of bound Maintenance Manuals on all electrical equipment provided, including lighting fixtures, power and lighting panels, disconnects, combination motor starters, transformers, switches, and receptacles.

2.1 WIRE

- A. Minimum size for all copper wire shall be #12 AWG.
- B. The following minimum size shall apply to all 20 ampere circuits:

	60'-100'	100'-150'	150' and up	150'-225'	225' and up
120V	#10 AWG	#8 AWG	#6 AWG		
240V		#10 AWG		#8 AWG	#6 AWG

- C. Minimum size of branch circuits over 20 amps shall be:
- 30 amp #10 AWG
 - 40 amp #8 AWG
 - 50 amp #6 AWG
- D. Insulation shall conform to NEC requirements.
- E. Submersible pump conductors shall be supplied by the equipment vendors and shall be of the extra heavy usage type constructed of Class K or H tinned, copper bunch-stranded wires. Insulation shall be EPD with a single pass of CP for Size No. 14 through No. 10 AWG conductors and double pass of CP for Size No. 8 and larger.

2.2 CONDUIT

- A. All wiring is required to be in conduit. The minimum size shall be 3/4" trade size for all wiring. All conduit sizes shall be in conformance with the NEC. The following conduit material may be used on the project where indicated:

1. steel rigid metal conduit
 2. aluminum rigid metal conduit
 3. steel intermediate metal conduit
 4. steel electrical metallic tubing (EMT)
 5. PVC rigid nonmetallic conduit
 6. flexible metal conduit
 7. liquid-tight flexible metallic: conduit shall not exceed 72" in length nor be smaller than 1/2". MC cables or "BX" will not be permitted.
- B. Fittings shall be designed to conform with the conduit selected and shall be of designated size to complete the conduit system.
- C. Compression couplings and connectors are to be used with EMT. Set screw types will not be accepted.
- D. Rigid Metal Conduit
1. Rigid metal conduit shall be galvanized steel, hot-dipped with zinc over the entire length, both exterior and interior including threads. In addition, conduits shall have a coat of lacquer for sealing.
 2. Each conduit shall have a coupling on one end and a thread protector on the other end ANSI Standards C80.1 and C80.4 latest revisions. The conduit shall be manufactured by Pittsburgh Standard Conduit Company, Triangle PWC Co., or approved equal.
 3. Conduit and fittings shall be in accordance with the NEMA Standard TC-2 and TC-3, latest revisions.
- E. PVC Rigid Nonmetallic Conduit
1. PVC rigid nonmetallic conduit shall be NEMA TC 2, Type EPC-40-PVC, UL 651 with matching fittings by same manufacturer as the conduit, complying with NEMA TC 3 and UL 541B.
- F. Flexible Conduit
1. Flexible metallic tubing shall be hot dipped zinc galvanized flexible steel and comply with UL Standard No. 1, latest revisions. Conduit shall be manufactured by Anaconda Metal Hose Company, Triangle PWC Co., or approved equal.
 2. Liquid-tight flexible metal conduit shall be constructed of flexible corrosion resistant zinc galvanized steel conduit with an extruded plastic jacket and built-in continuous copper ground strap under the jacket. Conduit shall be Type UA manufactured by Anaconda Metal Hose Company, Type LA manufactured by Electric-flex Co., or approved equal.
 3. Flexible metal conduits installed in areas classified as Hazardous shall be in compliance with Article 501 of the NEC and shall be Crouse-Hinds Series EC, Killark Series EK or equal.

G. Device Boxes for Outlets, Switches, Lighting and Junction Boxes.

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1. Device boxes used with rigid steel conduit shall be hot dipped galvanized cast iron or copper free aluminum with device covers manufactured for use with the device boxes.
2. "GEM" boxes or standard 4" & 5" sq. KO boxes will not be acceptable on the project.

H. Conduit Outlet Bodies

1. Metallic - Conduit outlet bodies shall be used where required to permit ready fishing and withdrawing of wires. Conduit bodies not located in areas classified as Hazardous shall be gasketed. Bodies shall be of the cast iron or copper-free aluminum type. Bodies shall be Condulet series manufactured by Crouse-Hinds Co., Electrolet series manufactured by Killark Co., or approved equal.
2. PVC Nonmetallic - Conduit outlet bodies shall be used where required to permit ready fishing and withdrawing of wires. Conduit bodies not located in areas classified as Hazardous shall be gasketed. Bodies shall be sunlight resistant, UL listed and labeled and of the same manufacturer as the conduit. Type EPC-40-PVC complying with NEMA TC 2 and UL 651 unless otherwise indicated on contract drawings.

I. Conduit Sleeves

1. Where conduits pass through the walls or floors of structures, they shall be installed in suitable sleeves. Sleeves, installed in the outside walls of structures or elsewhere where water tightness is required, shall be steel and shall be caulked.

J. Conduit Hangers and Supports

1. Hangers and supports for conduits shall be of an approved design and shall be adequate to support conduit systems with a minimum safety factor of 10.
2. All fasteners shall be stainless steel, silicon bronze, or PVC coated.
3. All expansion anchors shall be self-drilling or expansion type. Plastic anchors will be unacceptable.

K. Installation

1. All areas shall be interpreted as industrial and all conduit work shall be installed exposed except areas with finished ceilings or as otherwise shown and specified on the drawings.
2. Areas in which there is a finish ceiling as indicated on the Contract Drawings, "Room Finish Schedule," shall have all conduit work concealed.
3. All interior power and control wiring shall be run in rigid metal conduit or approved aluminum or fiberglass cable trays unless otherwise indicated on contract drawings.
4. All conduit and cable tray installations shall be at right angles, parallel to walls and floors. Diagonal installations will not be accepted.
5. Conduits buried in ground shall be galvanized rigid metal conduit unless otherwise shown on contract drawings.
6. Liquid Tight Flexible metallic tubing will be accepted for final connection of lighting circuits in lengths not to exceed 72".

7. Final connections to motors and other vibrations equipment shall be liquid tight flexible metal conduit not exceeding 72" in length.
8. Where spare conduits are shown to be installed, the conduit shall be capped at each end and provided with a cable pull string.
9. All conduits routed next to walls, columns, or ceilings shall have 1/4" spaces between conduit and walls or ceiling.
10. Conduit reducers shall not be allowed.
11. Expansion joints shall be installed in conduits crossing buildings expansion joints.

L. Underground Conduits

1. Warning Tape shall be placed in trenches, buried 12" under finish grade and located directly over the center line of the conduits.
 - a. Tape shall be magnetic, yellow and have imprinted in a minimum of 1" high letters "CAUTION BURIED ELECTRIC WIRE BELOW" or appropriate warning approved by the Engineer.
 - b. Tape shall be 6" wide, 4.5 mil thick, made of low density polyethylene
2. All buried metallic conduits shall be individually tied to the plant grounding grid at each electric manhole or handhole.
3. Pressure clamps and ground wires shall be in accordance with the Section headed "Grounding".
 - a. Connections to the conduit system shall be installed in accordance with the manufacturer's recommendations to obtain harmonious ground continuity without deleteriously affecting the conduits protective coating.
4. Underground conduits exiting and entering structures shall have expansion couplings as specified.

L. Conduits in Outdoor Environment and Corrosive Areas.

1. Where conduits pass through Corrosive Area walls and/or floors, seal off fittings as specified shall be installed to prevent gas leakage through conduit system.

2.3 SWITCHES, OUTLETS AND COVERS

- A. Due to the large number of manufacturers, the Contractor may select any brand as long as it is 20 amp "industrial duty" rated at 125 volts. Covers shall be made to fit neatly and be an integral part of the box and switch or outlet.
- B. Use 20 amp. Industrial grade grounded receptacles.
- C. Contractor is to note conditions set forth in NEC Article 310, Note 8 and plan all conduit installations accordingly.
- D. Any installation of conductors in interior conduit runs until the building is made weather tight will not be accepted.

2.4 POWER DISTRIBUTION AND SERVICE

- A. The Contractor shall supply and install all equipment, wiring and conduit necessary. All materials

must be installed in accordance with the NEC, town and county codes.

2.5 PANELS - As shown on Contract Drawings

- A. All new electrical panels are to be labeled with self-adhering Lamacoid type labels with 1/4" white letters on black background. Labels are to include the panel designation as well as the power source.
- B. Each new panel is to have a detailed typewritten directory included with a duplicate being included in the O&M manuals.

2.6 DISCONNECTS

- A. On all motors greater than 1/4 HP and according to NEC requirements, in pump control. All motors greater than 1/4 HP to have disconnects or combination motor starters as indicated.
- B. All disconnect switches are to be heavy duty NEMA 3R.

2.7 ELECTRICAL BOXES

- A. Refer to #2.2. G. above.

2.8 LIGHTING

- A. As indicated on the Contract Drawings.

2.9 INSTRUMENTATION CABLES

- A. Control cable shall consist of 600-volt, individual conductors constructed of a minimum of seven strands of No. 14 AWG uncoated Class B copper concentric-lay-stranded wires. Each conductor shall have PE insulation and color-coded PVC outer jacket. Multi-conductor assemblies shall have an additional overall PVC jacket around conductors. Cables shall be Type 20-10 as manufactured by Anaconda, Type CT-B manufactured by Rome Cable Co. or equal. All control cables shall be tagged at either end.
- B. Twisted pair instrumentation conductors shall consist of two twisted strands of No. 16 AWG tinned coated Class C copper concentric-lay-stranded wires with a foil tape shield with #16 copper drain wire equal to Belden No. 8719. Each conductor shall have PE insulation and color-coded PVC outer jacket. With multi-conductor twisted pair assemblies, a 4-mil thick soft copper type shall be applied over cable assembly in lieu of the individual shielding and an additional overall PVC jacket around conductors. All instrumentation cables shall be tagged at either end.
- C. All junction and device boxes for concealed locations shall be 4" sq. x 2 1/8" deep minimum with blank covers or device rings. "GEM" type boxes will not be permitted.
- D. All exposed conduit installations are to be at right angles to the structure and shall be installed in a professional manner.

PART 3. EXECUTION

3.1 TESTING

A. 600V AND BELOW

1. Each panel shall be tested with the main disconnected from the supply, branches connected, breakers closed and all fixtures in place and connected, lamps removed and switches closed.

2. Each circuit will then be tested at the panel.

3.2 GROUNDING

- A. Grounding shall be installed as per the requirements of the NEC and the utility company.
- B. All grounding shall be illustrated on the Contractor's working drawings. Shop drawings of the main service ground must be submitted to the utility company for approval. Railings and stairs must be bonded to the building concrete reinforcement system with "cad weld" termination kits.
- C. All poured concrete work level slabs are to be bonded to the building structural steel with 1/0 AWG copper conductors bonded to the steel with "CAD_WELD" kits and to the slab mesh with brass insulated split bolt connectors. Tank floors are excluded from the bonding requirements.
- D. All metal railings are to be bonded to the reinforcement grid of adjacent foundation or tank walls or footings at intervals not to exceed 20'. The bonding will be with #2 copper conductors using brass insulated split bolt connectors and 2 bolt compression crimp lugs.

3.3 GROUND FAULT PROTECTION

- A. Shall be provided on all receptacles except outlets for chemical feed pumps and outlets in the control room.

3.4 CONDUIT INSTALLATION

- A. Contractor is to note conditions set forth in NEC Article 310, Note 8 and plan all conduit installations accordingly.
- B. All areas shall be interpreted as industrial and all conduit work shall be installed exposed except as otherwise shown and specified.
 - 1. Areas in which there is a finish ceiling or walls as indicated on the Contract Drawings, shall have all conduit work concealed.
 - 2. All power and control wiring shall be run in rigid metal conduit.
 - 3. Flexible metallic tubing shall be used for final lighting connections only.
 - 4. Connections to motors and other vibrations equipment shall be liquid tight flexible metal conduit. In Hazardous Areas flexible metallic conduits shall be suitable for the location.
 - 5. Where spare conduits are shown to be installed, the conduit shall be capped at each end and provided with a nylon fishwire.
 - 6. All conduits routed next to walls, columns, or ceilings shall have 1/4" spaces between conduit and walls or ceiling.
 - 7. Conduit reducers shall not be allowed.
 - 8. Expansion joints shall be installed in conduits crossing buildings expansion joints and on all PVC (where allowed) underground installations at intervals not to exceed 250'.
- B. Underground Conduits
 - 1. All buried metallic conduits shall be individually tied to the plant grounding grid at:
 - a. Each electric manhole or handhole.

2. Pressure clamps and ground wires shall be in accordance with the Section headed "Grounding".
 - a. Connections to the conduit system shall be installed in accordance with the manufacturer's recommendations to obtain harmonious ground continuity without deleteriously affecting the conduits protective coating.
 3. All buried conduits or groups of conduits two feet in width or less shall have an identifying tape buried 18" under finish grade and located directly over the center line of the conduits.
 4. Underground conduits exiting and entering structures shall have expansion couplings as specified.
- C. Any installation of conductors in interior conduit runs must not occur until the building is made weather tight.
- 3.4 Power distribution and service
- A. The Contractor shall supply and install all equipment, wiring and conduit necessary. All materials must be installed in accordance with the NEC code, and the local electric utility.
 - B. The Contractor shall supply all interior lighting and receptacles as shown on the contract drawings.
 - C. The Contractor shall supply line voltage power to all equipment installed by the General Contractors on the project.
 - D. The Contractor shall provide three (3) complete sets of bound Maintenance Manuals on all electrical equipment provided, including lighting fixtures, power and lighting panels, disconnects, combination motor starters, transformers, switches, and receptacles.

PART 4 PAYMENT

Payment for this Section shall be included in Contract No. TE-2020-E.

END OF SECTION

SECTION 16483
VARIABLE FREQUENCY DRIVES (VFDs)

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. This specification describes the electrical, mechanical, environmental, agency and reliability requirements for three-phase, variable frequency drives (VFDs) as specified herein and as shown on the contract drawings.
- B. Supply VFDs for the following applications:
 - 1. New Duplex Pump Station – 5 HP

1.2 REFERENCE STANDARDS

- A. The variable frequency drives and all components shall be designed, manufactured and tested in accordance with the latest applicable standards of IEC, UL, CUL, and NEMA.

1.3 SUBMITTALS

- A. The following information shall be submitted to the Engineer:
 - 1. Wiring diagrams
 - 2. Electrical schematic diagrams
 - 3. Front and side views of enclosures
 - 4. Overall dimensions
 - 5. Conduit entrance locations and requirements
 - 6. Nameplate legends
 - 7. Physical layout
 - 8. Enclosure details
- B. Product Data: Provide data sheets showing; voltage, short circuit ratings, and weights.
- C. Manufacturer's Installation Instructions and Technical Manuals: Indicate application conditions and limitations of use stipulated by product testing agency specified under regulatory requirements. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of variable frequency drive. Document the sequence of operation, cautions and warnings, spare parts lists and programming guidance.
- D. The final (as-built) drawings shall include the same drawings as the construction drawings and shall incorporate all changes made during the manufacturing process.

1.5 QUALITY ASSURANCE

- A. VFD shall have a minimum MTBF (mean time between failures) rating of 28 years (245,280 Hours).
- B. The drive manufacturing facility shall be ISO 9001 and 14001 certified.
- C. The drive shall be UL listed, or Canadian UL listed, or CSA listed and comply with EMC Directive 89/336 EEC, Low Voltage Directive 73/23 EEC in accordance with the European Union's CE directive.
- D. The drive shall utilize efficient "bidirectional switch" technology throughout the entire drive manufacturer's power and voltage range.

- E. The drive shall utilize the same communications architecture, utilizing plug-in communications cards, for high-speed noise immune connectivity throughout the entire drive manufacturer's power range.
- F. The drive manufacturer shall have an analysis laboratory to evaluate the failure of any component. The failure analysis lab shall allow the manufacturer to perform complete electrical testing, x-ray components, and decap or delaminate components and analyze failures within the component.
- G. The drive shall utilize surface mount technology in the manufacturing of internal printed circuit boards and electronics, for maximum reliability.

1.6 OPERATION AND MAINTENANCE DATA

- A. Equipment operation and maintenance manuals shall be provided with each assembly shipped, and shall include instructions leaflets and instruction bulletins for the complete assembly and each major component.
- B. Include instructions for starting and operating VFD, and describe operating limits, which may result in hazardous or unsafe conditions.

1.7 QUALIFICATIONS

- A. Manufacturer must have a minimum of 25 years of documented experience, specializing in variable frequency drives.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Equipment shall be handled and stored in accordance with manufacturer's instructions. One (1) copy of these instructions shall be included with the equipment at time of shipment.
- B. Accept VFD on site in original packing. Inspect for damage.
- C. Store in a clean, dry space. Maintain factory wrapping, or provide an additional heavy canvas or heavy plastic cover, to protect units from dirt, water, construction debris, and traffic.
- D. Handle carefully, in accordance with manufacturer's written instructions, to avoid damage to components, enclosure, and finish.

1.9 WARRANTY

- A. Provide VFD warranty, for one year from date of startup, not to exceed 18 months from date of shipment. Warranty shall include parts, and labor allowance for repair hours.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. VFD shall be Z1000U type, manufactured by YASHKAWA America, Inc., or approved equal.
- B. Motors should be inverter duty rated, per NEMA MG1 parts 30 and 31, for motor-drive compatibility.
- C. The listing of specific manufacturers above does not imply acceptance of their products that do not meet the specified ratings, features and functions. Manufacturers listed above are not relieved from

meeting these specifications in their entirety. Products in compliance with the specification and manufactured by others not named will be considered only if pre-approved by the Engineer ten (10) days prior to bid date.

2.2 DESCRIPTION

- A. Provide enclosed variable frequency drives suitable for operation at the current, voltage, and horsepower indicated on the schedule. Conform to requirements of NEMA ICS 3.1.

2.3 RATINGS

- A. VFD must operate, without fault or failure, when voltage varies plus 10% or minus 15% from rating, and frequency varies plus or minus 5% from rating.
- B. VFD shall be 208 volts, 60 Hz, 3 Phase.
- C. Power Factor: 0.98 minimum for rated operation.
- D. Service factor: 1.0
- E. Operating Ambient Temperature:
NEMA 1 (IP20): -10°C to 40°C (14°F to 104°F)
- F. Ambient storage temperature: -20°C to 60°C (-4°F to 140°F)
- G. Humidity: 0% to 95% non-condensing.
- H. Altitude: to 3,300 feet (1000m), higher altitudes achieved by derating.
- I. Vibration: 9.81m/s² (1 G) maximum at 10 to 20 Hz, 2.0 m/s² (0.2 G) at 20 Hz to 55 Hz.
- J. Minimum Efficiency: 96% at half speed; 98% at full speed.
- K. Starting Torque: 150% starting torque shall be available from 3 Hz to 60 Hz without derating. Drive shall be able to run at 100% current at 0.0 Hz continuously.
- L. Overload capability: 120% of rated FLA (Full Load Amps) for 60 seconds; 150% of rated FLA peak.
- M. Controlled speed range of 40:1
- N. The VFD's shall include EMI/RFI filters. The onboard RFI filter shall allow the entire VFD assembly to be CE Marked and the VFD shall meet product standard EN 61800-3 for the Second Environment, Category C2. No Exceptions.
- O. Total Harmonic Distortion (THD) compliance to IEEE 519:

The Drive Manufacturer shall provide calculations showing total harmonic current distortion and total harmonic voltage distortion is less than 5%, both with no individual harmonic greater than 3%, at the drive input terminals. Calculations at the transformer are not acceptable. This requirement may be met by VFD's that use Matrix conversion technology. 18-Pulse input VFD's will be accepted

in lieu of Matrix conversion technology. VFD's employing the use of 6-Pulse, Passive Filters, 12-Pulse, or "LCL" filter schemes will be rejected. Additional equipment required to meet this performance will be the responsibility of the contractor with no additional cost to the owner.

- P. VFDs must be suitable for use on a circuit capable of delivering not more than 100,000 RMS symmetrical amperes.

2.4 DESIGN

- A. VFD shall employ microprocessor based inverter logic, isolated from all power circuits.
- B. VFD shall include surface mount technology with protective coating.
- C. VFD shall employ use of matrix conversion technology for direct conversion of AC to AC. Active AC to DC rectifier schemes are not acceptable and will be rejected. 6 pulse, passive filters, and 12-pulse rectifiers are not acceptable and will also be rejected.

1. Input / Output Section:

VFD input power stage shall convert three-phase AC line power directly into variable AC output. The main circuit shall consist of a compact input filter and bidirectional switches. The bidirectional switches are power devices that carry the full current of the drive. VFD's without direct AC to AC conversion will require integral 18-Pulse Transformer input.

- D. VFD shall have an adjustable carrier frequency, from 4 kHz to 10 kHz.
- E. VFD must include an adjustable dynamic noise control for quiet motor operation.
- F. VFD must have a Harmonic Suppression Priority setting.
- G. VFD shall have embedded Building Automation System (BAS) protocols for network communications; BACnet, Johnson Controls Metasys N2, Siemens P1 Apogee, and Modbus/Memobus. These protocols shall be accessible via a RS-422/485 communication port.
- H. VFD shall include three independent analog inputs. Selectable for either 0-10 VDC or 4-20 mA. Either input shall respond to a programmable bias and gain.
- I. VFD shall include a minimum of seven multi-function digital input terminals, capable of being programmed to determine the function on a change of state. These terminals shall include, but not limited to:
 - 1. Remote/Local operation selection
 - 2. Customer Safeties
 - 3. BAS / Damper Interlock
 - 4. Emergency Override
 - 5. Preset Speed
 - 6. PI control enable / disable
- J. VFD shall include two selectable 0-10 VDC or 4-20 mA analog outputs for monitoring, or "speed tracking" the VFD. The analog output signal will be proportional to output frequency, output current, output power, PI (Proportional & Integral control) feedback or power supply voltage.

- K. VFD shall provide terminals for remote input contact closure, to allow starting in the automatic mode.
- L. VFD shall provide 24 Vdc, 150ma transducer power supply
- M. VFD shall include at least one external fault input, which shall be programmable for a normally open or normally closed contact. These terminals can be used for connection of firestats, freezestats, high pressure limits or similar safety devices.
- N. VFD shall include one fixed "Fault" form "C" contact, and three programmable form "A" contacts capable of being programmed to determine conditions that must be met in order for them to change state. These output relay contacts shall be rated for at least 2A at 120 VAC and shall include, but not limited to:
1. Speed agree detection
 2. Damper control
 3. Hand / Auto Status
 4. No load detection (broken belt alert)
 5. Contactor Control for External Bypass
 6. Drive Faulted
 7. Serial communication status
- O. VFD shall include a power loss ride through capable of 2 seconds.
- P. VFD shall have "hold at zero speed" capability, to stop a motor that is "wind milling" at start or stop.
- Q. VFD shall have a motor preheat function to prevent moisture accumulation in an idle motor.
- R. VFD shall include diagnostic fault indication, time and date
- stamped faults storage and heatsink cooling fan operating hours.
- S. VFD shall have a digital operator with program copy and storage functions to simplify set up of multiple drives. The digital operator shall be interchangeable for all drive ratings.
- T. VFD shall include a front mounted, sealed keypad operator, with an English language illuminated LCD display. The operator will provide complete programming, program copying, operating, monitoring, real time clock and diagnostic capability. Keys provided shall include industry standard commands for Hand, Off, and Auto functions.
- U. VFD plain language display shall provide readouts of; output frequency in hertz, PI feedback in percent, output voltage in volts, output current in amps, output power in kilowatts, power supply voltage in volts, interface terminal status, heatsink temperature and fault conditions. All displays shall be viewed in an easy-to-read illuminated LCD.
- V. VFD shall have an internal time clock. The internal time clock shall include a backup via battery. The time clock will be used to date and time stamp faults and record operating parameters at the time of fault. The internal time clock can be programmable to control start/stop functions, constant speeds, PID parameter sets and output Form-C relays.

- W. VFD unit shall include the following meters to estimate use of energy:
1. Elapsed Time Meter
 2. Kilowatt Meter
 3. Kilowatt Hour Meter
 4. Energy Savings Meter
- X. VFD shall include a user selectable PI control loop, to provide closed loop set point control capability, from a feedback signal, eliminating the need for closed loop output signals from a building automation system. The PI controller shall have a differential feedback capability for closed loop control of fans and pumps for pressure, flow or temperature regulation in response to dual feedback signals.
- Y. VFD shall have an independent, PI loop that can be used with a second analog input that will vary the VFD analog output and maintain a set point of an independent process (valves, dampers.....).
- Z. The VFD shall include HVAC specific application macros. The macros can be used to help facilitate start-up. The macros will provide initialization to program all parameters and customer interfaces for a particular application (Fans, Pumps and Cooling Towers) to reduce programming time.
- AA. An energy saving sleep function shall be available in both open loop (follower mode) and closed loop (PI) control, providing significant energy savings while minimizing operating hours on driven equipment. When the sleep function senses a minimal deviation of a feedback signal from set point, or low demand in open loop control, the system reacts by stopping the driven equipment. Upon receiving an increase in speed command signal deviation, the drive and equipment resume normal operation.
- BB. VFD shall include loss of input signal protection, with a selectable response strategy including speed default to a percent of the most recent speed.
- CC. VFD shall include electronic thermal overload protection for both the drive and motor. The electronic thermal motor overload shall be approved by UL. If the electronic thermal motor overload is not approved by UL, a separate UL approved thermal overload relay shall be provided in the VFD enclosure.
- DD. VFD shall include the following program functions:
1. Critical frequency rejection capability: 3 selectable, adjustable dead bands.
 2. Auto restart capability: 0 to 10 attempts with adjustable delay between attempts.
 3. Ability to close fault contact after the completion of all fault restart attempts.
 4. Stall prevention capability.
 5. "S" curve soft start / soft stop capability.
 6. Bi-directional "Speed search" capability, in order to start a rotating load.
 7. 14 preset and 1 custom volts per hertz pattern.
 8. Heatsink over temperature speed fold back capability.
 9. Terminal status indication.
 10. Program copy and storage in a removable digital operator.
 11. Programmable security code.
 12. Current limit adjustment capability, from 30% to 200% of rated full load current of the VFD.
 13. Motor pre-heat capability.
 14. Input signal or serial communication loss detection and response strategy.
 15. Anti "wind-milling" function capability.

16. Automatic energy saving function.
17. Undertorque/Overtorque Detection.
18. Fan failure detection and selectable drive action.
19. "Bumpless" transfer between Hand and Auto modes
20. Seven preset speeds.
21. VFD shall include factory settings for all parameters, and the capability for those settings to be reset.
22. VFD shall include user parameter initialization capability to re-establish project specific parameters.
23. VFD shall include programmable HVAC specific application macros.
24. USB Type B port for quick and easy PC Connection.
25. VFD shall include the capability to adjust the following functions, while the VFD is running:
 - a. Speed command input.
 - b. Acceleration adjustment from 0 to 6000 seconds.
 - c. Deceleration adjustment from 0 to 6000 seconds.
 - d. Select from 7 preset speeds.
 - e. Analog monitor display.
 - f. Removal of digital operator.

2.5 PRODUCT OPTIONS

- A. Enclosure
 1. NEMA/UL Type 3R enclosure for outdoor installation.
 2. Output Reactor (5%).
 3. Drive Service Switch.

2.6 FABRICATION

- A. All standard and optional features shall be included in a single NEMA 1, plenum rated enclosure with a UL certification label.

2.7 SOURCE QUALITY CONTROL

- A. In-circuit testing of all printed circuit boards shall be conducted, to insure the proper mounting and correct value of all components.
- B. Final printed circuit board assemblies shall be functionally tested, via computerized test equipment. All tests and acceptance criteria shall be preprogrammed. All test results shall be stored as detailed quality assurance data.
- C. All fully assembled controls shall be functionally tested, with fully loaded induction motors. The combined test data shall then be analyzed, to insure adherence to quality assurance specifications.
- D. Inspect and production test, under load, each completed VFD assembly.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that surface is suitable for VFD installation.

- B. Do not install VFD until the building environment can be maintained, within the service conditions required by the manufacturer.

3.2 INSTALLATION

- A. Install VFD where indicated, in accordance with manufacturer's written instructions and NEMA ICS 3.
- B. Tighten accessible connections and mechanical fasteners after placing VFD.
- C. Provide a nameplate label on each VFD with, full load amperes, model number, and voltage/phase rating.

3.3 FIELD QUALITY CONTROL

- A. Field inspection and testing to be performed under provisions of Section 01650.
- B. Inspect completed installation for physical damage, proper alignment, anchorage, and grounding.

3.4 MANUFACTURER'S FIELD SERVICES

- A. Provide the services of a qualified manufacturer's employed Factory Authorized Field Service Engineer to assist the Contractor in installation and start-up of the equipment specified under this section. Sales representatives will not be acceptable to perform this work. The manufacturer's service representative shall provide technical direction and assistance to the Contractor in general assembly of the equipment, installation as specified in manufacturer's installation instructions, wiring, application dependent adjustments, and verification of proper VFD operation.
- B. The following minimum work shall be performed by the Contractor under the technical direction of the manufacturer's service representative:
 - 1. Inspection and final adjustments
 - 2. Operational and functional checks of VFDs and spare parts
 - 3. The contractor shall certify that he has read the drive manufacturer's installation instructions and has installed the VFD in accordance with those instructions.
- C. The Contractor shall provide three (3) copies of the manufacturer's field start-up report before final payment is made.

PART 4. PAYMENT

Payment shall be included in Contract No. TE-2020-E.

END OF SECTION