

**CONTRACT DOCUMENTS**  
**FOR**  
**TOWN OF LLOYD**  
**HUSDSON RIVER PUMP GENERATOR**

**TOWN OF LLOYD**  
**12 CHURCH STREET**  
**HIGHLAND, NY 12528**

**April 2024**



**CPL Project No.: R21.16218.00**

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## **Town of Lloyd Hudson River Pump Generator**

### ADVERTISEMENT FOR BIDS

Sealed Bids for the construction of the Hudson River Pump Generator will be received by **the Town of Lloyd**, at Town Hall, until **11:00 a.m.** local time on May 30, 2024 at which time the Bids received will be **publicly** opened and read aloud.

This Project generally consists of furnishing and installing an emergency generator, transfer switch, conduit, devices and wiring. Gas service to the generator is included.

Bids shall be on a items included on the bid form.

The Town of Lloyd has received a grant for the work from NYSDHSES. Compliance with all requirements of the granting agency is included.

Official bid documents are obtained from the Empire State Purchasing Group's Regional Bid Notification system at [www.bidnetdirect.com/new-york/county-of-dutchess](http://www.bidnetdirect.com/new-york/county-of-dutchess). Copies of documents obtained from any other source are not considered official copies. Any and all addenda pertaining to the bid will be posted at the same website as noted above. It is incumbent upon all bidders to view posted addenda prior to the bid close date. If a bidder is not registered, they may register at the website noted above. The bidder can call BidNet at 1-800-835-4603 with questions regarding registration

The Issuing Office for the Bidding Documents is: **CPL, 26 IBM Road, Poughkeepsie, New York 12601**. Prospective Bidders may examine the Bidding Documents starting on May 2, 2024 at the Issuing Office on Mondays through Fridays between the hours of **8:00 a.m. and 4:00 p.m. by appointment only**. **Bidding documents will also be available for inspection on week days between the hours of 8:00 AM and 4:00 PM at the Town of Lloyd Town Clerk's office located at 12 Church Street, Highland, NY 12528, starting on May 2, 2024**

A pre-bid conference will be held on May 8, 2024 **at 10:00 a.m. at the Town of Lloyd Town Hall**.

Only written Requests For Information (RFI) will be accepted. RFI's will be accepted until **4:00 p.m.** (Local Time) on May 20, 2024, at the office of the Engineer to the attention of Andrew Learn, PE via email: [alearn@cplteam.com](mailto:alearn@cplteam.com).

Bid security shall be furnished in accordance with the Instructions to Bidders.

Each bid must be accompanied by a certified bank check or bid bond from a domestic carrier licensed to do business in the State of New York in the amount of not less than five (5%) of the amount of the bid submitted.

Bidders are required to execute the Non-Collusive Bidding Certificate pursuant to Section 103-d of the General Municipal Law.

Owner: **Town of Lloyd**

By: **Wendy Rosinski**

Title: **Town Clerk**

Date: May 1, 2024

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DIVISION 3 : ..... CONCRETE

DIVISION 22: ..... FACILITIES NATURAL GAS

DIVISION 26 ..... ELECTRICAL

DIVISION 31 ..... SITE WORK

# INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACTS

Prepared by



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# 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 **and where the bidding procedures are to be administered.**

## ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01 Official bid documents are obtained from the Empire State Purchasing Group’s Regional Bid Notification system at [www.bidnetdirect.com/new-york/county-of-dutchess](http://www.bidnetdirect.com/new-york/county-of-dutchess). Copies of documents obtained from any other source are not considered official copies. Any and all addenda pertaining to the bid will be posted at the same website as noted above. It is incumbent upon all bidders to view posted addenda prior to the bid close date. If a bidder is not registered, they may register at the website noted above. The bidder can call BidNet at 1-800-835-4603 with questions regarding registration
- 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 **five (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:
- 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.”
- D. **EJCDC® C-451, Qualifications Statement.**
- E. Other required information regarding qualifications, **as deemed necessary by the Owner and Engineer.**
- 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.

- 3.05 In order for the Owner to assure itself that the Bidder has the necessary competence and experience to properly perform the Work, the Bidder shall have at least 3 years' experience in the performance of contracts similar to the Work of this Contract under its present management. The Bidder shall have completed at least 3 contracts, with at least 2 contracts for municipalities or government agencies, these installations being comparable in size, type, and locality to the Work to be performed under this Contract (e.g., rural areas, residential areas, urban areas, site conditions, etc.). Bidder shall submit Qualifications Statement (EJCDC C-451/Specification 00451) as required by the Owner and Engineer. The Owner may request further information, which must be supplied by the Bidder that is under consideration for Contract award.

#### **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.

##### 4.03 *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.
- 6.02 **If held, 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 a meeting summary and 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 **46** 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 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 the General Conditions.**

## **ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS**

- 12.01 **DELETED.**
- 12.02 **DELETED.**
- 12.03 **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 the following all portions of the Work.**
- 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.
- 12.04 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.
- 12.05 **Contractor shall not be required to employ any Subcontractor, Supplier individual, or entity against whom Contractor has reasonable objection.**
- 12.06 **The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.06.**

## **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.”

- C. **Contractors may submit a Bid price for any Base Bid or Alternate Bid. If Contractor does not wish to submit a Bid price for a particular Base Bid or Alternate Bid, they shall indicate “No Bid” on the line for the total amount of that Base Bid or Alternate Bid, as well as on the summary page of the Bid form.**
- 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 seal shall be affixed and attested by the secretary or an assistant secretary.** The corporate address and state of incorporation shall be shown.
- 13.03 **A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be provided on the Bid Form.**
- 13.04 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.
- 13.05 A Bid by an individual shall show the Bidder’s name and official address.
- 13.06 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.
- 13.07 All names shall be printed in ink below the signatures.
- 13.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.10 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*

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- 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.
- 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.



#### 14.02 Allowances

- A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

### 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 Owner at the address in Article 1.01 of the Bid Form.**
- 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 the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner shall announce to all bidders a “Base Bid plus alternates” budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.
- 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 **New York** state sales and use taxes on materials and equipment to be incorporated in the Work, **under section 1116 of the Tax Law**. Said taxes shall not be included in the Bid. Refer to Paragraph SC-7.09 of the Supplementary Conditions for additional information.

## **ARTICLE 23 – RETAINAGE**

23.01 **Provisions concerning Contractor's rights to deposit securities in lieu of retainage are set forth in the Agreement.**

## **ARTICLE 24 – WAGE RATE REQUIREMENTS**

24.01 **If the contract price is in excess of \$100,000, provisions of the Contract Work Hours and Safety Standards Act at 29 CFR 5.5(b) apply.**

24.02 **The prevailing wage rates of the State of New York apply to this contract as do any requirements of the State of New York associated with the use of these State Prevailing wages.**

24.03 **The prevailing wage rates of the United States Department of Labor apply to this project. The Labor Standards Provisions found at 29 CFR 5.5(a) apply to this project if the prevailing wage rates of the Department of Labor apply. If the contract cost is in excess of \$100,000, provisions of the Contract Work Hours and Safety Standards Act at 29 CFR 5.5(b) also apply.**

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**BID FORM  
FOR CONSTRUCTION CONTRACTS**

**TOWN OF LLOYD  
HUDSON RIVER PUMP GENERATOR**

Prepared by



Issued and Published Jointly by



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**BID FORM**  
**TOWN OF LLOYD**  
**HUDSON RIVER PUMP GENERATOR**

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**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to: ***Town of Lloyd, Town Hall, 12 Church Street, Highland, NY 12528.*** 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 45 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 complete the Work in accordance with the Contract Documents for the following price(s):
- A. Bidder acknowledges that each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item.
  - B. Bidder acknowledges that 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.
  - C. The Owner reserves the right to reject any and all proposals.

**CONTRACT A: ELECTRICAL CONSTRUCTION**

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Estimated Quantity</b>	<b>Bid Unit Price</b>	<b>Bid Price</b>
1	Mobilization/Demobilization	LS	1		
2A	Generator Concrete Pad	LS	1		
2B	Generator	LS	1		
2C	Automatic Transfer Switch (ATS)	LS	1		
3	Secondary: pole to ATS (include excavation, backfill, restoration)	LS	1		
4	Conduit and conductors Ex. Switch gear to ATS	LS	1		
5	Power Conduit and wire ATS to Generator (include excavation, backfill, restoration)	LS	1		
6	Communication Conduit and wire ATS to Generator (include excavation, backfill, restoration)	LS	1		
7	Service Entrance Fused Disconnect	LS	1		
8	Bollards(include excavation, backfill, restoration)	EA	7		
9	Rock Excavation	CY	25		
10	Gas service installation including coordination with Central Hudson and payment of all Central Hudson costs, installation of gas piping and meter	LS	1		
10	Allowance Item 1 – Miscellaneous Additional Work	LS	1	\$45,000	\$45,000
<b>Total of All Unit Price Bid Items</b>					

**The Owner reserves the right to reject any and all proposals. The Owner reserves the right to award the Base Bid (one Contract only) to the lowest, responsive, responsible bidder based on which Bid best fits the project budget and priorities.**

## **ARTICLE 6 – TIME OF COMPLETION**

- 6.01 Bidder agrees that the Work will be substantially complete within 180 days from the Notice to Proceed and will be completed and ready for final payment within 210 days from the Notice to Proceed.
- 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 Federal ID No.: ;
  - G. **Non-Collusive Bidding Certificate, included within Section 00410A; and**
  - H. **Sexual Harassment Policy/Training Affirmation, included within Section 00410A;**
- 7.02 **The following documents shall be submitted in accordance with Article 3 of the Instructions to Bidders:**
- A. Required Bidder Qualification Statement with supporting data, **included within Section 00451.**

## **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: \_\_\_\_\_

**BASE BID (GENERAL CONSTRUCTION)**

\_\_\_\_\_ \$ \_\_\_\_\_  
(in writing) (and figures)

Address for giving notices:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Contact Name and e-mail address: \_\_\_\_\_  
\_\_\_\_\_

Bidder's Federal ID No.: \_\_\_\_\_

## NON-COLLUSIVE BIDDING CERTIFICATE

In accordance with the provisions of Section 103-d of the General Municipal Law as amended, the following "Non-Collusive Bidding Certificate" is and shall become a part of this proposal: (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 organizations under penalty of perjury, that to the best of his knowledge and belief; (1) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other BIDDER or with any competitor; (2) unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the BIDDER and will not knowingly be disclosed by the BIDDER prior to opening, directly or indirectly, to any other BIDDER or to any competitor; and (3) no attempt has been made or will be made by the BIDDER to induce any other person, partnership, or corporation to submit or not to submit a bid for the purpose of restriction of competition."

---

Legal Name of Bidder

---

Address

---

Signature

---

Name and Title

---

Date

In accordance with the provisions of Section 103-a of the General Municipal Law the following clause is hereby inserted to provide:

"That upon the refusal of a person, when called before a grand jury to testify concerning any transaction or contract had with the State, any political subdivision thereof, a public authority or with any public department, agency, or official of the State or of a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract, (a) such person, and any firm, partnership, or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or any public department, agency, or official thereof, for goods, work, or services, for a period of five years after such refusal, and to provide also that (b) any and all contracts made with any municipal corporation or any public department, agency, or official thereof, since the effective date of this law, by such person, and by any firm, partnership, or corporation of which he is a member, partner, director, or officer may be canceled or terminated by the municipal corporation without incurring any penalty or damages on account of such cancellation or termination, but any monies owing by the municipal corporation for goods delivered or work done prior to the cancellation or termination, but any monies owing by the municipal corporation for goods delivered or work done prior to cancellation or termination shall be paid.

**SEXUAL HARASSMENT POLICY/TRAINING AFFIRMATION**

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 the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all its employees.

Contractor Information:

Name of Contractor: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Facsimile: \_\_\_\_\_

Email Address: \_\_\_\_\_

\_\_\_\_\_  
(Date) (Signature of Contractor) (Title)

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**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 (Seal)

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature (Attach Power of Attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
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.

1.16 BASIS OF PAYMENT

A. General

The quantity to be paid under this item will be for completing the electrical facilities and related appurtenances as set forth in the plans, drawings, and specifications relating to this contract.

Payments to the Contractor shall be made on the basis of the Bid Form as full and complete payment for furnishing all materials, labor, tools and equipment, and for performing all operations necessary to complete the work included in the Contract Documents. Such compensation shall also include payments for any loss or damages arising directly or indirectly from the work, or from any discrepancies between the actual quantities of work and those shown in the Contract Documents, or from any unforeseen difficulties, which may be encountered during the prosecution of the work until the final acceptance by the Owner.

The prices stated in the Bid Form include all costs and expenses for taxes, labor, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the details specified herein. The "Basis of Payment" for an item at the price shown in the Bid Form shall be in accordance with its description of the item in this Section and as related to the work specified. Unit prices will be applied to the actual quantities furnished in conformance with the Contract Documents.

Payments for all work completed under this contract will be made in accordance with the provisions of the Information to Bidders on the basis of the specific provisions of this Section of the Specifications. The quantities stated in the Bid Form are approximate only and are intended to serve as the basis for the comparison of bids.

The Contractor's attention is called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirety. Should the Contractor feel that the cost for any item of work has not been established in the Bid Form or this Section, the cost for that Work shall be included in some other applicable Bid Item, so that the Bid Form for the project reflects the total price for completing the work in its entirety.

The quantities for payment under this Contract shall be full compensation determined by actual measurement of the completed items, in place, ready for service and accepted by the Owner unless otherwise specified. The Engineer will witness all field measurements.

The Owner does not expressly or impliedly agree that the actual amount of the work to be done on the final contract amount in the performance of the contract will correspond with the quantities in the Bid Form; the amount of work to be done may be more or less than the said quantities and may be increased or decreased by the Owner as circumstances may require. The increase or decrease of any quantity

shall not be regarded as grounds for an increase in the unit price or in the time allowed for the completion of the work, except as provided in the Contract Documents.

The Owner will not provide any payment for stored materials. It is intended that all work required to complete this Contract will be included in the various bid items as described in the following paragraphs.

B. Item No. 1 – Mobilization/Demobilization

1. Scope of Work

The Contractor shall set up the necessary storage areas, office and such sanitary and other facilities as required by local or state law or regulation. The cost of fulfilling the requirements, including required material or equipment submittals, shop drawings, construction photographs, survey and construction layout, miscellaneous paper work, insurance and bonds, required permits, temporary facilities and controls, execution requirements, close out documentation (record drawings, test reports) and/or any initiation or restoration of the Contract work.

2. Payment

The Contractor shall submit an itemized schedule breakdown of his estimated costs of lump sum items, for approval by the Engineer. The total costs under this item shall not exceed 5% of the total bid price. 50% will be paid for mobilization. The remaining 50% will be paid for demobilization.

Payment to the Contractor shall be made in accordance with the approved lump sum breakdown.

C. Item No. 2A. Generator Concrete Pad

1. Scope of Work

The Contractor shall furnish all materials, labor and equipment required to install equipment and appurtenances complete for service, as called for in contract documents, including, but not limited to, the following:

- Temporary Truck Access Ways
- Clearing and Grubbing, including removal of trees less than 12” in

diameter

- Stake Out, Survey and Alignment
- Temporary Erosion Controls
- Maintenance and Protection of Traffic
- Saw Cutting Existing Pavement
- Excavation for pad
- Subbase for pad
- Formwork for pad
- Rebar for pad
- Stub up of conduits through slab
- Concrete and finishing for pad
- Curing of pad
- Maintenance and Protection of Utilities
- Dewatering, as required
- Backfill and Compaction of Soil and Aggregate Materials
- Restoration of Paved and Improved Surfaces, Temporary Pavement
- Restoration of Grass Surfaces and plantings

2. Payment

The quantity for payment will be on a lump sum basis for installation of the pad as shown on the Contract Drawings, and as required.

D. Item No. 2B Generator

1. Scope of Work

The Contractor shall furnish all materials, labor and equipment required to install Generator and appurtenances complete for service, as called for in the Contract Documents, including, but not limited to, the following:

- Purchase of generator
- Delivery of generator to site
- Setting generator on pad
- Electrical connection to the generator
- Start up, testing and commissioning of generator

2. Payment

The quantity for which payments will be made on a lump sum basis for providing the generator, connection, testing, start up and commissioning as shown on the plans

E. Item 2C Automatic Transfer Switch (ATS)

1. Scope of Work

The Contractor shall furnish all materials, labor and equipment required to install the ATS for service, as called for in the Contract Documents, including, but not limited to, the following:

- Purchas of ATS
- Installation of ATS
- Electrical connection to ATS
- Start up of ATS
- Testing and Programming of ATS
- Commissioning of ATS

The work required under this item should be in conformance with, but not limited to, the following specification sections:

2. Payment

The quantity for which payments will be mad on a lump sum basis for providing the ATS as called for in contract documents.

F. Item No. 3

Secondary: Pole to ATS

1. Scope of Work

The contractor shall furnish all materials, labor and equipment required to install electric service from the pole to the ATS as called for in the Contract Documents, including, but not limited to, the following:

- Coordination with Central Hudson
- Payment of Central Hudson Fees
- Site Clearing, including removal of trees less than 12” in diameter
- Stakeout Surveying and Alignment.
- Temporary Erosion Controls.
- Saw cutting of pavement
- Excavation of trench.
- Dewatering as necessary.
- Placement of bedding materieals
- Installation of conduit
- Installation of initial backfill bedding

- Installation of marking tape
- Backfill and compaction
- Installation of wire
- Pavement Restoration

2. Payment

Payment will be made on a lump sum basis for electric service from the pole to the ATS as called for in contract documents.

G. Item No. 4 Conduit and conductors existing switch gear to ATS

1. Scope of Work

The Contractor shall provide the conduit and conductors from existing switch gear to the ATA as called for in contract documents.

- Cutting and patching
- Installation of conduit
- Hangars and supports for conduit
- Installing wire
- Identification of conduit
- Connections to Switch Gear

2. Payment

Payment will be made on a lump sum basis for conduit and wire from switch gear to ATS as called for in contract documents and as required based on existing conditions.

H. Item No. 5 – Power conduit and wire form ATS to generator

1. Scope of Work

The Contractor shall furnish all materials labor and equipment required to remove and dispose of rock, as called for in the Contract Documents, including, but not limited to, the following:

- Site Clearing, including removal of trees less than 12” in diameter
- Stakeout Surveying and Alignment.
- Temporary Erosion Controls.
- Saw cutting of pavement
- Excavation of trench.
- Dewatering as necessary.
- Placement of bedding materials
- Installation of conduit

- Installation of initial backfill bedding
- Installation of marking tape
- Backfill and compaction
- Installation of wire
- Pavement Restoration

2. Payment

Payment will be made on a lump sum basis for conduit and power wiring from ATS to generator as called for in contract documents.

I. Item No. 6 – Communications conduit and wire: ATS to Generator

1. Scope of Work

The Contractor shall perform all work associated with clearing of all trees, brush and related items in the off-road tree line areas as called forth in the Contract Documents. This shall include, but not be limited to the following:

- Site Clearing, including removal of trees less than 12” in diameter
- Stakeout Surveying and Alignment.
- Temporary Erosion Controls.
- Saw cutting of pavement
- Excavation of trench.
- Dewatering as necessary.
- Placement of bedding materials
- Installation of conduit
- Installation of initial backfill bedding
- Installation of marking tape
- Backfill and compaction
- Installation of wire
- Pavement Restoration

2. Payment

Payment shall be on a lump sum basis for communication wire and conduit as called for in the contract documents

J. Item 7 – Service Entrance Fused Disconnect

a. Scope of Work

The Contractor shall furnish all materials, labor and equipment required to provide the service disconnect, as called for in the Contract Documents, in conformance with all permit conditions, including, but not limited to, the

following:

- Purchase of disconnect
- Installation of disconnect
- Wiring connection to disconnect
- 3<sup>rd</sup> party electrical inspection

2. Payment

Payment is made on a lump sum basis for all work associated with the disconnect, as shown in the contract docu

K. Item No. 8 – Bollards

a. Scope of Work

The contractor shall furnish all materials, labor and equipment required to install bollards, as called for in the Contract Documents, including, but not limited to, the following:

- Excavation,
- Setting bollard
- Concrete infill of bollards
- Backfill and Compaction

b. Payment

Payment will be made for each bollard installed, as called for on contract documents

L. Item No. 9 Rock Excavation

a. Scope of Work

The contractor shall furnish all materials, labor and equipment required to remove rock as necessary to install all items as called for in the Contract Documents, including, but not limited to, the following:

- Removal of rock if mobilization of a machine with a rock hammer is required
- Disposal of rock
- Replacement of removed rock with suitable material for backfill



b. Payment

Payment will be made for each cubic yard of rock removed as agreed with the engineer.

M. Item No. 10 Gas Service

1. Scope of Work

The Contractor shall provide all labor, equipment, materials and goods and services necessary to provide gas service as necessary to supply fuel to the generator that should include or not be limited to the following:

- Coordination with Central Hudson
- Payment of Central Hudson Fees
- Compliance with all Central Hudson Requirements
- Saw cutting of pavement as required
- Excavation for gas line
- Providing bedding materials
- Provide gas service piping
- Provide initial backfill materials
- Backfill and compaction
- Setting of meter
- Regulators as required
- Connection to generator
- Restoration of pavement or other surfaces

2. Payment

Payment will be on a lump sum basis for providing the gas service as necessary to provide fuel for the generator

N. Allowance Item No. 1 - Miscellaneous Additional Work

1. Scope of Work

During the course of this Contract work, if and when miscellaneous work is ordered by the engineer, the Contractor shall follow the requirements of the specifications. The itemized proposal shall include an allowance of seventy five thousand dollars and no cents (\$45,000.00).

2. Payment

Payment will be made under this item only for work which is actually

performed and properly assigned by the Engineer for compensation under this Item. The Contractor will be deemed not to have included in this Item any overhead and profit for any other portion of his work on the Contract, since there is a possibility that the entire amount of this Item may not be used. The Contractor shall submit vendor invoices for work under this item.

# QUALIFICATIONS STATEMENT

Prepared by



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# 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:				
	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:				
	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:				
	Name: Address: Telephone:	Name: Company: Telephone:				





**AGREEMENT  
BETWEEN OWNER AND CONTRACTOR FOR  
CONSTRUCTION CONTRACT (STIPULATED PRICE)  
TOWN OF LLOYD  
HUDSON RIVER PUMP GENERATOR**

Prepared by



Issued and Published Jointly by



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

THIS AGREEMENT is by and between Town of Lloyd (“Owner”) and  
\_\_\_\_\_ (“Contractor”).

Co-Owners 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:

**Furnishing and installing an emergency stand by generator at the River Road pump station. All required, conduit, wiring, start up, testing, excavation, restoration to provide a complete project is included.**

**ARTICLE 2 – THE PROJECT**

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

**Town of Lloyd  
Hudson River Pump Generator**

**ARTICLE 3 – ENGINEER**

3.01 The Project has been designed by CPL.

3.02 The Owner has retained CPL (“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 4 – CONTRACT TIMES**

4.01 *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.

4.02 *Contract Times: Days to Achieve Substantial Completion and Final Completion*

- A. The Work associated with Contract A shall be substantially completed in accordance with Paragraph 15.03 of the General Conditions within **180 days**, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within **210 days**.

4.03 *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 \$ 1,000 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 \$ 1,000 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.

4.04 **[DELETED]**

**ARTICLE 5 – CONTRACT PRICE**

5.01 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 Work, at the prices stated in Contractor’s Bid, attached hereto as an exhibit:

BASE BID: \_\_\_\_\_ \$ \_\_\_\_\_  
(words) (numerals)

**ARTICLE 6 – PAYMENT PROCEDURES**

6.01 *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.

6.02 *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 20 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. 95 percent of Work completed (with the balance being retainage)
  - 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 100 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.

#### 6.03 *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 as recommended by Engineer as provided in said Paragraph 15.06.

### ARTICLE 7 – INTEREST

- 7.01 All amounts not paid when due shall bear interest at the **maximum** rate per annum **allowed by law at the place of the project**.

### ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 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, 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. 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 and drawings 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 9 – CONTRACT DOCUMENTS

### 9.01 *Contents*

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 00520A-1 to 00520A-9, inclusive).
  - 2. Performance bond (pages 00610-1 to 00610-2, inclusive).
  - 3. Payment bond (pages 00615-1 to 00615-2, inclusive).
  - 4. Other bonds.
    - a. **Bid Bond** (pages 00430-1 to 00430-2, inclusive).
  - 5. General Conditions (pages 00700-1 to 00700-73, inclusive).
  - 6. Supplementary Conditions (pages 00800-1 to 00800-xx, inclusive).
  
- 7. Specifications as listed in the table of contents of the Project Manual, bearing the title

**Town of Lloyd  
Hudson River Pump Generator**

8. Drawings (not attached but incorporated by reference) consisting of sheets with each sheet bearing the following general title:

**Town of Lloyd  
Hudson River Pump Generator**

9. Addenda (numbers  to , inclusive).
10. Exhibits to this Agreement (enumerated as follows):
  - a. Contractor's Bid (pages **00410A-1** to **00410A-11**, 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. Change 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 10 – MISCELLANEOUS**

### 10.01 *Terms*

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

### 10.02 *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.

### 10.03 *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.

### 10.04 *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.

#### 10.05 *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.

#### 10.06 *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.



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

This Agreement will be effective on \_\_\_\_\_, 202\_ (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

**Town of Lloyd**  
\_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Attest: \_\_\_\_\_

Attest: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Address for giving notices:

Address for giving notices:

**Town of Lloyd**  
\_\_\_\_\_

\_\_\_\_\_

**12 Church Street**  
\_\_\_\_\_

\_\_\_\_\_

**Highland, New York 12528**  
\_\_\_\_\_

\_\_\_\_\_

Federal ID  
No. \_\_\_\_\_

*(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.)*

*NOTE TO USER: Use in those states or other jurisdictions where applicable or required.*

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## PERFORMANCE BOND

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

### 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

\_\_\_\_\_  
Contractor's Name and Corporate Seal *(seal)*

\_\_\_\_\_  
Surety's Name and Corporate Seal *(seal)*

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature *(attach power of attorney)*

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
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)*:

### 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

\_\_\_\_\_ *(seal)*

Surety's Name and Corporate Seal

By: \_\_\_\_\_

Signature

By: \_\_\_\_\_

Signature *(attach power of attorney)*

\_\_\_\_\_

Print Name

\_\_\_\_\_

Print Name

\_\_\_\_\_

Title

\_\_\_\_\_

Title

Attest: \_\_\_\_\_

Signature

Attest: \_\_\_\_\_

Signature

\_\_\_\_\_

Title

\_\_\_\_\_

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:

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



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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. §§5501 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.H 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 consider 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 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 11.01.C.2.a and

11.01.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 special 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;
  - l. 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

Prepared by



Issued and Published Jointly by





These **Supplementary Conditions** have been prepared for use with the Standard General Conditions of the Construction Contract (EJCDC® C-700, 2013 Edition). Their provisions are interrelated and a change in one may necessitate a change in the other. The language contained in the **Instructions to Bidders** (EJCDC® C-200, 2013 Edition) is also carefully integrated with the language of this document. The full EJCDC Construction series of documents is discussed in the **Commentary on the 2013 EJCDC Construction Documents** (EJCDC® C-001, 2013 Edition).

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## 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 Empire State Development.

### ARTICLE 2 – PRELIMINARY MATTERS

#### *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 five copies of the Contract Documents (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF).

### ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

**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:**

- A. The following reports of explorations and tests of subsurface conditions at or adjacent to the Site are known to Owner:
- B. Contractor may examine copies of reports and drawings identified in SC 5.03.C that were not included with the Bidding Documents at the office of the Engineer during regular business hours, or may request copies from Engineer, subject to reimbursement. *These reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which the Contractor may rely as identified and established above are incorporated therein by reference. Contractor is not entitled to rely upon other information and data utilized by Engineer in the preparation of the Drawings and Specifications.*

SC-5.05 *Underground Facilities*

**SC-5.05.A.3** Add the following paragraph after Paragraph 5.05.A.2:

3. The Contractor shall be required to fully inform himself concerning the location of public or private facilities and structures on, under, or over the project, which may interfere with proposed operations. It shall be assumed that the Bid was prepared and the Contract entered into with the Contractor's full understanding of the conditions to be encountered, and responsibilities in connection therewith. From investigations and field surveys, the location of such facilities and structures as have been brought to the attention of the Engineer are indicated on the Drawings, but the location of water, electric, gas, sewer, telephone lines, etc., and the nature of materials is not guaranteed. The indication on the Drawings of such facilities shall not be assumed to relieve the Contractor of any responsibility with respect thereto; neither shall the Owner or the Engineer be held responsible for any omission or failure to give notice to the Contractor of any other facility or structure, on, under, or over the project, or the presence of rock or unsuitable material.
  - a. The Contractor shall notify all utilities through the Dig Safely New York at (800) 962-7962 at least two days prior to any excavation so that each utility can mark or locate their respective lines for the Contractor.
  - b. The Contractor shall indicate that he has notified all utilities by supplying to the Engineer the serial or code numbers received from the respective utility.

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-6.03 *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 as noted in this section. Prior to commencement of any work under this Contract and until completion and final acceptance of the work, the Contractor/Provider shall, at its sole expense, maintain the following insurance on its own behalf, and furnish to the Town of Fishkill certificates of insurance evidencing same and reflecting the effective date of such coverage as follows:

The term "Contractor/Provider" as used in this indemnification agreement shall mean and include Subcontractors of every tier.

1. **Workers' Compensation, and Employers Liability Policy, along with related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:**

Covering operations in New York State: A minimum of \$1,000,000 each claim, \$1,000,000 per disease and in aggregate shall be provided for Employers liability coverage. Evidence must be provided on a C-105.2. Waiver of Subrogation to be included in favor of the Town of Fishkill.

Federal, if applicable (e.g., Longshoreman's):	<u>Statutory</u>
Foreign voluntary worker compensation	<u>Statutory</u>

2. **Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions. :**

General Aggregate \$ 2,000,000

Each Occurrence (Bodily Injury and Property Damage) \$ 1,000,000

This shall include coverage for:

- A. Premises & Operations
- B. Products/Completed Operations;
- C. Independent Contractors;
- D. Personal & Advertising Injury
- E. Blanket Contractual Liability
- F. XCU
- G. The Town of Fishkill and their assigns, officers, employees, representatives and agents should be named as an "Additional Insured" on the policy using ISO Additional Insured Endorsement CG 20 10 11/85 or an endorsement providing equivalent or broader coverage and shall apply on a primary and non-contributory basis, including any self insured retentions. The Certificate of Insurance should show this applies to the General Liability coverage on the certificate, and Additional Insured Endorsement shall be attached.
- H. To the extent permitted by New York law, the Contractor/Provider waives all rights of subrogation or similar rights against the Town of Fishkill, assigns, officers, employees, representatives and agents.
- I. General Aggregate shall apply separately to each project (must be on an occurrence form).
- J. Cross Liability coverage (Commercial General Liability and Business Automobile Liability policies only).
- K. General Liability policy must NOT contain any coverage exclusions

or restrictions related to the scope of work being performed as well as injuries to employees, subcontractors, or employees of subcontractors (i.e. labor law).

L. Products/Completed Operations: coverage to remain in force for (2) years following completion of the project.

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Limits of no less than \$1,000,000 Bodily Injury and Property Damage liability including coverage for owned, non-owned, and hired private passenger and commercial vehicles.

A. The Town of Fishkill and their assigns, officers, employees, representatives and agents should be named as an "Additional Insured" on the policy on a primary, non-contributory basis. The Certificate of Insurance should show this applies to the Automobile Liability coverage on the certificate, and Additional Insured Endorsement shall be attached.

B. To the extent permitted by New York law, the Contractor/Provider waives all rights of subrogation or similar rights against the Town of Fishkill, assigns, officers, employees, representatives and agents.

C. If motor vehicles are used for transporting hazardous materials, the Contractor shall provide pollution liability broadened coverage (ISO endorsement CA 9948) as well as proof of MCS 90.

4. Excess or Umbrella Liability:

Per Occurrence	\$ 5,000,000
General Aggregate	\$ 5,000,000

including coverage for General Liability, Automobile, and Workers Compensation and Professional Liability (if applicable) & Pollution Liability (if applicable). Waiver of Subrogation to be included in favor of the Town of Fishkill. Coverage for the additional insured shall apply on a primary and non-contributor basis, including any self-insured retentions.

5. Contractor's Pollution Liability:

Each Occurrence	\$ 2,000,000
General Aggregate	\$ 2,000,000

Contractor shall maintain and cause its Subcontractors doing such work to maintain Contractors Pollution Liability Insurance including coverage for third-party liability claims covering any environmental claims, liabilities, loss or damage, including property damage, bodily injury, disease, transporter liability and properties contaminated during transportation caused by pollution conditions that arise from the operations of the Contractor and its Subcontractors of every tier. Such insurance shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants (including asbestos),

including any loss, cost or expense incurred as a result of any cleanup of pollutants (including asbestos), or in the investigation, settlement or defense of any claim, action, or proceedings arising from the operations under the Contract. Such insurance shall be in the Contractor's name and name the Town of Fishkill as an additional insured on a primary, non-contributory basis including a Waiver of Subrogation in favor of the Town of Fishkill. Additional Insured coverage shall be at least as broad as provided to the Contractor for this project. If such insurance is written on a claims-made policy, such policy shall have a retroactive date on or before the effective date of this Contract, and continuous coverage shall be maintained, or an extended discovery period exercised, for a period of not less than three (3) years from the time the Work under this Contract is completed.

6. **N.Y.S. Disability:** Covering all employees. Evidence must be provided on a DB 120.1.
7. **Property Insurance:** The Contractor shall cover materials being installed onsite, in transit, and/or at any other location.
8. **Bid, Performance and Labor & Material Bonds:** If required in the specifications, these bonds shall be provided by a New York State admitted Surety Company, in good standing.
9. **Owners & Contractors Protective Liability:** \$2,000,000 Per Occurrence / \$2,000,000 Aggregate with the Town of Fishkill as the named insured, and maintained during the life of this contract which will protect the Town of Fishkill from claims for damages for personal injury, liability, accidental or wrongful death, as well as property damage which may arise from operations under this contract whether such operations be by the contractor or by any subcontractor or by anyone directly or indirectly employed by either party.
10. **Additional Insureds:** In addition to Owner (Town of Fishkill) and Engineer (CPL), include as additional insureds the following: New York State Department of Transportation (NYSDOT)
  - a. NYSDOT will require an individual Acord 25 as certificate holder with the following address: NYSDOT Region 8 Permits, for additional permit requirements.

The Contractor/Provider shall furnish to the Town of Fishkill Certificates of Insurance as evidence of coverage prior to commencement of work and naming the Town of Fishkill as an Additional Insured by endorsement. The Contractor/Provider acknowledges that failure to obtain such insurance on behalf of the Town of Fishkill constitutes a material breach of contract and subjects it to liability for damages, indemnification and all other legal remedies available to the Town of Fishkill. The failure of the Town of Fishkill to object to the contents of the certificate or absence of same shall not be deemed a waiver of any and all rights held by the Town of Fishkill. Certificates shall provide that thirty (30) days written notice prior to cancellation or expiration be given to the Town of Fishkill. Policies that lapse and/or expire during term of work shall be

recertified and received by the Town of Fishkill no less than thirty (30) days prior to expiration or cancellation.

The cost of furnishing the above insurance shall be borne by the Contractor/Provider. Cost will be deemed to have been included in the price bid for all scheduled items.

*SC-6.05 Property Insurance*

**SC 6.05.A.** Delete the first sentence of Paragraph 6.05.A and insert the following sentence in its place:

**Owner 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).**

**ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

*SC-7.01 Supervision and Superintendence*

**SC-7.01C** Add the following paragraph after Paragraph 7.01.B:

- C.** On-site job meetings will be held during the performance of the work of this Contract. Meetings will be held every two to four weeks at a mutually agreed upon location, convenient to the work site. Corporate officers representing the Contractor and major subcontractors that are deemed necessary must attend. Representative of the Owner, Engineer, and Funding Agency may also attend. The Contractor shall attend the meetings at no cost to the Owner.

*SC-7.02 Labor; Working Hours*

**SC-7.02.B.** Add the following new paragraph immediately after Paragraph 7.02.B:

- C.** Unless otherwise especially permitted, no work shall be done between the hours of 6:00 p.m. and 7:00 a.m. nor on Sunday or a legal holiday, except as necessary for the proper care and protection of work already performed. If it shall become absolutely necessary to perform work at night or on Sunday or a legal holiday, the Engineer shall be informed at least 24 hours in advance of the beginning of performance of such work. Only such work shall be done at night as can be done satisfactorily as determined by the Engineer and in a first-class manner. Good lighting and all other necessary facilities for carrying out and inspecting the work shall be provided and maintained at all points where such work is being done.

**SC-7.02.C.** Add the following new subparagraph immediately after Paragraph 7.02.C:

- 1.** For purposes of administering the foregoing requirement, additional overtime costs are defined as *listed in applicable State or Federal Wage Rates governing work.*



SC-7.04.A. Amend the third sentence of Paragraph 7.04.A 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-7.04.C Amend the paragraph by making two subparagraphs under the title *C. Engineer's Evaluation and Determination*. The paragraph text is retitled, *7.04.C.2 After Effective Date of Agreement*. A new paragraph is added before this paragraph to read as follows:

1. *During Bidding*. The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or "or-equal" materials and equipment as defined in paragraph 6.05 of the General Conditions, or those substitute materials and equipment approved by the Engineer and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function, and quality to be met by any proposed substitute or "or-equal" item. Request for Engineer's clarification of materials and equipment considered "or-equal" prior to the Effective Date of the Agreement must be received by the Engineer at least 5 business days prior to the date for receipt of Bids. No item of material or equipment will be considered by Engineer as a 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. Each request shall conform to the requirements of Paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon the Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any proposed substitute 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.

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-7.08 Permits

SC 7.08 Add the following new paragraphs after Paragraph 7.08.A:

- B. The Contract will require Highway Work Permits from the New York State Department of Transportation. The Contractor shall obtain the Permits with

copies of the plans and specifications to be provided by the Owner. The Contractor shall pay all necessary permit fees and post all necessary bonds. The Contractor shall be required to abide by the requirements of the Permits.

- D. The Contract will require Permits from the New York State Department of Environmental Conservation. The Contractor shall pay all necessary fees and post all necessary bonds. The Contractor shall be required to abide by the requirements of the Permits.
- E. The Contract will require Permits from the United States Department of the Army Corps of Engineers. The Contractor shall pay all necessary fees and post all necessary bonds. The Contractor shall be required to abide by the requirements of the Permits.
- F. The Contract requires that the contractor follow New York State Stormwater Pollution Prevention Plan (SWPPP) requirements. The Contractor shall be required to abide by any requirements of the Stormwater Pollution Prevention Plan.

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.

SC-7.11 *Record Documents*

**SC 7.11** Add the following new paragraphs after Paragraph 7.11.A:

- B. The Contractor shall obtain at his expense one (1) set of Contract Drawings in non-reproducible black and white prints, and one (1) set of Contract Drawings in reproducible form (plans on mylar) for the purpose of recording "as built" conditions.
- C. The Contractor shall perform all survey work required for the location and construction of the work required to complete record drawings. Record drawings shall show the relative location by dimension with respect to each other of the final location of the work, including: sanitary force mains, valves, air release/vacuum breaker manholes, metering manholes, fittings, etc.
- D. It shall be the responsibility of the Contractor to mark each sheet of the non-reproducible "Record Drawings" in red crayon and to record thereon in a neat and current form, any and all approved field changes and conditions as they may occur. A complete file of approved field sketches, diagrams, and other

changes, as may become necessary during the progress of the Work, shall also be maintained and attached to the "Record" set of Contract Drawings. At completion of the Work, each sheet of "Record" prints, plus all approved field sketches and diagrams shall be submitted to the Engineer for his approval and use in establishing a basis for final payment.

*SC-7.12 Safety and Protection*

**SC-7.12 Add the following paragraph after Paragraph 7.12.G:**

- H. *Site Safety* – Engineer’s site responsibilities are limited solely to the activities of Engineer and Engineer’s employees on site. These responsibilities shall not be inferred by any party to mean that the Engineer has responsibility for site safety. Safety in, on or about the site is the sole and exclusive responsibility of the Contractor alone. The Contractor’s methods of work performance, superintendence of the Contractor’s employees, and sequencing of construction are also the sole and exclusive responsibilities of the Contractor alone. Owner warrants that: 1) The Contractor’s responsibilities will be made clear in the Owner’s agreement with the Contractor; 2) Owner’s agreement with the Contractor shall require the Contractor to indemnify, defend, and hold Owner and Engineer harmless from claim or liability for injury or loss arising from the Owner’s or Engineer’s alleged failure to exercise site safety responsibility; and 3) Owner’s agreement with the Contractor shall require the Contractor to make the Owner and Engineer additional insured’s under the Contractor’s general liability insurance policy, which insurance protection shall be primary protection for Owner and Engineer.**

**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.

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

*SC-11.07.C Add the following new Paragraph after Paragraph 11.07.B:*

- C. 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-13.01 *Cost of the Work*

SC 13.01.B.5.c Delete Paragraph 13.01.B.5.c in its entirety and insert the following in its place:

- c. **Construction Equipment and Machinery:**
  - 1) Rentals of all construction equipment and machinery, and the parts thereof, 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.
  - 2) Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment in the *Equipment Watch, Rental Rate Blue Book, or other locally accepted rate book*. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs. Costs will include the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, shall cease to accrue when the use thereof is no longer necessary for the changed Work. Equipment or machinery with a value of less than \$1,000 will be considered small tools.

### SC-13.02 *Allowances*

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 20 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 *Progress Payments*

**SC-15.01.A.1** Add the following new Paragraph after Paragraph 15.01.A:

1. All Unit Price Work that requires testing and/or restoration shall be paid in accordance with the following schedule: 75% upon successful installation, 90% upon successful testing, and 100% upon successful restoration. Any modification of this schedule for a specific item will be indicated within the Basis of Payment for that item.

**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:

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.

**SC-15.01.B.4** Add the following new Paragraph after Paragraph 15.01.B.3:

4. The Application for Payment form to be used on this Project is EJDC 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:

1. 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 the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

### SC-15.02 *Contractor’s Warranty of Title*

**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 *Tribal Sovereignty*

**SC-18.09 Add the following new Paragraph after Paragraph 18.08:**

**SC-18.09 Tribal Sovereignty**

- A. No provision of this Agreement will be construed by any of the signatories as abridging or debilitating any sovereign powers of the Seneca Nation (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.

### SC-18.10 *Project Forms*

**SC-18.10 Add the following new Paragraph after Paragraph 18.09:**

**SC-18.10 Project Forms**

- A. Included in these Supplementary Conditions (as Exhibit SC-18.10) are forms that will be utilized for this project.

## SC 19 Add ARTICLE 19 titled “FUNDING 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 sections after Article 19.01 with the title “Contract Approval”:**

- A. Contractor will furnish to Owner such evidence as required by Agency, before Owner submits the executed Contract Documents to Agency for approval.
- B. 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 with the title “Conflict of Interest”:**

- 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 in 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 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 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-19.06 Add the following language after Article 19.05 with the title “Small, Minority and Women’s Businesses”:**

- A. If Contractor intends to let any subcontracts for a portion of the work, Contractor shall take affirmative steps to assure that small, minority and women’s businesses are used when possible as sources of supplies, equipment, construction, and services. Affirmative steps shall consist of: (1) including qualified small, minority and women’s businesses on solicitation lists; (2) assuring that small, minority and women’s businesses are solicited whenever they are potential sources; (3) dividing total requirements when economically feasible, into small tasks or quantities to permit maximum participation of small, minority, and women’s businesses; (4) establishing delivery schedules, where the requirements of the work permit, which will encourage participation by small, minority and women’s businesses; (5) using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce; (6) requiring each party to a subcontract to take the affirmative steps of this section; and (7) Contractor is encouraged to procure goods and services from labor surplus area firms.**

**SC-19.07** Add the following after Article 19.06 with the title “Anti-Kickback”:

- A. Contractor shall comply with the Copeland Anti-Kickback Act (18 USC 874 and 40 USC 276c) 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 of the United States”). The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

**SC-19.08** Add the following after Article 19.07 with the title “Clean Air and Pollution Control Acts”:

- A. If this Contract exceeds \$100,000, compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h) and 42 USC 7401et. seq.), section 508 of the Clean Water Act (33 U.S.C. 1368) and Federal Water Pollution Control Act (33 USC 1251 et seq.), Executive Order 11738, and Environmental Protection Agency regulations is required. Contractor will report violations to the Agency and the Regional Office of the EPA.

**SC-19.09** Add the following after Article 19.08 with the title “State Energy Policy”:

- A. Contractor shall comply with the Energy Policy and Conservation Act (P.L. 94-163). Mandatory standards and policies relating to energy efficiency, contained in any applicable State Energy Conservation Plan, shall be utilized.

**SC-19.10** Add the following after Article 19.09 with the title “Equal Opportunity Requirements”:

- A. If this Contract exceeds \$10,000, Contractor shall comply with Executive Order 11246, “Equal Employment Opportunity,” as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and as supplemented by regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor”.
- 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 19.10 with the title “Restrictions on Lobbying”:**

- A. Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-121, Section 319) as supplemented by applicable Agency regulations. This Law applies to the recipients of contracts and subcontracts that exceed \$100,000 at any tier under a Federal loan that exceeds \$150,000 or a Federal grant that exceeds \$100,000. If applicable, Contractor must complete a certification form on lobbying activities related to a specific Federal loan or grant that is a funding source for this Contract. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. 1352. Each tier shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Certifications and disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

**SC-19.12 Add the following after Article 19.11 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).
- 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: Refer to NYSDEC and USACE Permits.

**SC 21 Add ARTICLE 21 titled “STATE LABOR REQUIREMENTS”**

**SC-21.01 Add the following language as Paragraph 21.01 with the title “Schedule of Minimum Wage Requirements”:**

- A. Included in these Special (as Exhibit SC-21.01) is a set of minimum wage rates from the New York State Department of Labor covering work performed under this project. The Contractor is responsible to review these wage rates and will be responsible to pay the wages listed for each task employed. Refer to the end of these supplementary conditions for the schedule of state wage rates.
- B. The labor on this contract shall be performed in all respects in full accordance with the Labor Law of the State of New York. In accordance with Section 220, Subdivision 3, and Section 220-D, of the Labor Law, the Industrial Commissioner has designated as the minimum hourly rates to be paid to employees on this work the rates shown on the schedule included in these Supplementary Conditions, which shall be posted in a prominent and convenient place for the inspection of the Contractor's employees.
- C. Article 8, Section 220 of the Labor Law, as amended by Chapter 750 of the Laws of 1956, provides, among other things, that it shall be the duty of the fiscal officer to make a determination of the schedule of wages and supplements to be paid to all laborers, workmen, and mechanics employed on public work projects. The amount of supplements listed on the enclosed schedule does not necessarily include all types of prevailing supplements.
- D. The Contractor shall make provisions for disability benefits, workmen's compensation, unemployment insurance, and social security as required by law.
- E. Article 8 of the New York State Labor Law was amended on July 15, 1983 to provide that wages for public projects are to be paid pursuant to the existing bargaining agreement in the area where work is to be performed. Wages are to be paid on this project as herein set forth or pursuant to the collective bargaining agreement in effect and the federal wage rates, whichever is higher.

## PREVAILING WAGE SCHEDULE



Kathy Hochul, Governor

Roberta Reardon, Commissioner

Town of Lloyd  
Mark Long  
26 IBM Road  
Poughkeepsie NY 12601

Schedule Year 2023 through 2024  
Date Requested 02/28/2024  
PRC# 2024002446

Location Town of Lloyd  
Project ID# 24-01EC  
Project Type Installation of a 600KW gas powered generator with concrete pad, transfer switch, excavation, conduit and gas service piping installation, wiring and restoration

### 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 2023 through June 2024. 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](http://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 12226

# **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.

## **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 12226; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website [www.labor.ny.gov](http://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](http://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](http://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. As per Article 6 of the Labor law, contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records. 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 12226 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.



Kathy Hochul, Governor

Roberta Reardon, Commissioner

Town of Lloyd  
Mark Long  
26 IBM Road  
Poughkeepsie NY 12601

Schedule Year 2023 through 2024  
Date Requested 02/28/2024  
PRC# 2024002446

Location Town of Lloyd  
Project ID# 24-01EC  
Project Type Installation of a 600KW gas powered generator with concrete pad, transfer switch, excavation, conduit and gas service piping installation, wiring and restoration

### 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 12226

## **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' concern regarding 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. This change does not affect the Department's ability to request and receive the entire social security number from employers during its public work/ prevailing wage investigations.

## **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, <https://dol.ny.gov/public-work-and-prevailing-wage>

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.ny.gov](mailto:dol.misclassified@labor.ny.gov) .

## **Worker Notification: (Labor Law §220, paragraph a of subdivision 3-a)**

### **Effective June 23, 2020**

This provision is an addition to the existing 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 and supplement 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 job classification. The required notification will be provided with each wage schedule, may be downloaded from our website [www.labor.ny.gov](http://www.labor.ny.gov) or be made available upon request by contacting the Bureau of Public Work at 518-457-5589. \*In the event the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

(12.20)

**To all State Departments, Agency Heads and Public Benefit Corporations  
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND**

**Budget Policy & Reporting Manual**

**B-610**

**Public Work Enforcement Fund**

*effective date December 7, 2005*

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**1. Purpose and Scope:**

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, 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 12226

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.

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:

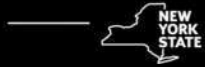
- **Civil Penalty**                      First offense: Up to \$2,500 per employee  
    Subsequent offense(s): Up to \$5,000 per employee
- **Criminal Penalty**                First offense: Misdemeanor - up to 30 days in jail, up to a \$25,000 fine and debarment from performing public work for up to 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](mailto:dol.misclassified@labor.ny.gov). All complaints of fraud and violations are taken seriously. You can remain anonymous.**

**Employer Name:**

IA 999 (09/16)





# 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.

Your pay stub and wage notice received upon hire must clearly state your wage rate and supplement rate.

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:**  
**<https://dol.ny.gov/bureau-public-work>**



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) 568-5287		

\* 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](http://www.comptroller.nyc.gov) – click on Bureau of Labor Law.

Contractor Name: \_\_\_\_\_

Project Location: \_\_\_\_\_

## Requirements for OSHA 10 Compliance

Article 8 §220-h requires that when the advertised specifications, for every contract for public work, is \$250,000.00 or more the contract 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 or 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 518-457-5589.

## WICKS

Public work projects are subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work, when the total project's threshold is \$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 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 the 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.

Contractors must pay subcontractors within a 7 days period.

(07.19)

## 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](http://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 12226

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

**Ulster County General Construction**

**Boilermaker** **04/01/2024**

**JOB DESCRIPTION** Boilermaker **DISTRICT 4**

**ENTIRE COUNTIES**  
 Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

**WAGES**

Per Hour:	07/01/2023	01/01/2024
Boilermaker	\$ 65.88	\$ 67.38
Repairs & Renovations	65.88	67.38

Repairs & Renovation: Includes Repairing, Renovating replacement of parts to an existing unit(s).

**SUPPLEMENTAL BENEFITS**

Per Hour:

Boilermaker	33.5% of hourly	33.5% of Hourly
Repair \$ Renovations	Wage Paid	Wage Paid
	+ \$ 26.49	+ \$26.85

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay.

Repairs & Renovation Includes replacement of parts and repairs & renovation of existing unit.

**OVERTIME PAY**  
 See (\*B, O, \*\*U) on OVERTIME PAGE  
 Note:\* Includes 9th & 10th hours, double for 11th or more.  
 \*\* Labor Day ONLY, if worked.

Repairs & Renovation see (B,E,Q) on OT Page

**HOLIDAY**  
 Paid: See (1) on HOLIDAY PAGE  
 Overtime: See (5, 6, 11, 12, 15, 25, 26, 29) on HOLIDAY PAGE

**REGISTERED APPRENTICES**  
 Wage per hour:  
 (1/2) Year Terms at the following percentage of Boilermaker's Wage

1st	2nd	3rd	4th	5th	6th	7th
65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits Per Hour:

Apprentice(s)	33.5% of Hourly Wage Paid Plus Amount Below	33.5% of Hourly Wage Paid Plus Amount Below
1st Term	\$ 20.12	\$ 20.36
2nd Term	21.03	21.28
3rd Term	21.95	22.22
4th Term	22.83	23.12
5th Term	23.76	24.07
6th Term	24.67	25.00
7th Term	25.58	25.93

NOTE: "Hourly Wage Paid" shall include any and all premium(s)

**Carpenter - Building / Heavy&Highway** **04/01/2024**

**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 west 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:	07/01/2023	07/01/2024
		Additional
Carpenter - ONLY for Artificial Turf/Synthetic Sport Surface	\$ 34.48	\$ 2.25*

\*To be allocated at a later date

Note - Does not include the operation of equipment. Please see Operating Engineers rates.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman	\$ 26.30
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**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 (1300 hour terms at the following percentage of Journeyman's wage):

1st	2nd	3rd	4th
65%	70%	75%	80%

Supplemental Benefits per hour:

1st term	\$ 17.56
2nd term	18.04
3rd term	20.06
4th term	20.54

2-42AtSS

**Carpenter - Building / Heavy&Highway**

**04/01/2024**

**JOB DESCRIPTION** Carpenter - Building / Heavy&Highway

**DISTRICT** 11

**ENTIRE COUNTIES**

Columbia, Dutchess, Orange, Sullivan, Ulster

**WAGES**

WAGES (per hour)

Applies to Carpenter (Building/Heavy & Highway/Tunnel), Dockbuilder, Piledriver, Dive Tender, and Diver (Dry):

	07/01/2023	07/01/2024	07/01/2025	07/01/2026
		Additional	Additional	Additional
Base Wage	\$ 35.81	\$ 2.16**	\$ 2.23**	\$ 2.30**
	+ 4.88*			

Applies to Diver (Wet):

Base Wage	\$ 50.00
	+ 4.88*

\*For all hours paid straight or premium.

\*\*To be allocated at a later date.

SHIFT DIFFERENTIAL: When mandated by a Government Agency irregular or off shift can be worked. The Carpenter shall receive an additional fifteen percent (15%) of the base wage.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyworker \$ 31.30

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

BUILDING:

Paid: See ( 1 ) on HOLIDAY PAGE.

Overtime: See ( 5, 6, 16, 25 ) on HOLIDAY PAGE.

- Holidays that fall on Sunday will be observed Monday.

HEAVY&HIGHWAY/TUNNEL:

Paid: See ( 5, 6, 25 ) on HOLIDAY PAGE

Overtime: See ( 5, 6 ) on HOLIDAY PAGE

- Holidays that fall on Sunday will be observed Monday

- Must be employed during the five (5) work days immediately preceding a holiday or during the five (5) work days following the paid holiday to receive holiday pay

- If Employee is entitled to a paid holiday, the Employee is paid the Holiday wage and supplemental benefits whether they work or not. If Employee works the Holiday, the Employee will receive holiday pay (including supplemental benefits), plus the applicable premium wage for working the Holiday. If Employee works in excess of 8 hours on Holiday, then benefits will be paid for any hours in excess of 8 hours.

**REGISTERED APPRENTICES**

1 Year terms at the following wage rates.

1st	2nd	3rd	4th	5th
\$ 17.91	\$ 21.49	\$ 23.28	\$ 25.07	\$ 28.65
+2.58*	+2.58*	+2.58*	+2.58*	+2.58*

\*For all hours paid straight or premium

SUPPLEMENTAL BENEFITS per hour:

All Terms \$ 16.32

11-279.2B/H&H

**Carpenter - Floor Coverer**

**04/01/2024**

**JOB DESCRIPTION** Carpenter - Floor Coverer

**DISTRICT** 11

**ENTIRE COUNTIES**

Columbia, Sullivan, Ulster

**PARTIAL COUNTIES**

Orange: The area lying on Northern side of Orange County demarcated by a line drawn from the Bear Mountain Bridge continuing west 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)

	07/01/2023	07/01/2024	07/01/2025
Carpet/Resilient Floor Coverer	\$ 35.81 +4.88*	Additional \$ 2.16**	Additional \$ 2.23**

\* For all hours paid straight or premium

\*\* To be allocated at a later date.

SHIFT DIFFERENTIAL: When mandated by a Government Agency irregular or off shift can be worked. The Carpenter shall receive an additional fifteen (15) percent of wage plus applicable benefits.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journey worker \$ 31.30

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

BUILDING:

Paid: See ( 1 ) on HOLIDAY PAGE.  
 Overtime: See ( 5, 6, 16, 25 ) on HOLIDAY PAGE.  
 - Holidays that fall on Sunday will be observed Monday.

**HEAVY&HIGHWAY/TUNNEL:**

Paid: See ( 5, 6, 25 ) on HOLIDAY PAGE  
 Overtime: See ( 5, 6 ) on HOLIDAY PAGE

- Holidays that fall on Sunday will be observed Monday  
 - Must be employed during the five (5) work days immediately preceding a holiday or during the five (5) work days following the paid holiday to receive holiday pay  
 - If Employee is entitled to a paid holiday, the Employee is paid the Holiday wage and supplemental benefits whether they work or not. If Employee works the Holiday, the Employee will receive holiday pay (including supplemental benefits), plus the applicable premium wage for working the Holiday. If Employee works in excess of 8 hours on Holiday, then benefits will be paid for any hours in excess of 8 hours.

**REGISTERED APPRENTICES**

1 Year terms at the following wage rates.

1st	2nd	3rd	4th	5th
\$ 17.91	\$ 21.49	\$ 23.28	\$ 25.07	\$ 28.65
+2.58*	+2.58*	+2.58*	+2.58*	+2.58*

\*For all hours paid straight or premium

**SUPPLEMENTAL BENEFITS per hour:**

All terms \$ 16.32

11-279.2Floor

**Electrician**

**04/01/2024**

**JOB DESCRIPTION** Electrician

**DISTRICT** 11

**ENTIRE COUNTIES**

Sullivan, Ulster

**PARTIAL COUNTIES**

Delaware: Only in the Townships of Andes, Harpersfield, Kortwright, Stamford, Bovina, Roxbury, Middletown and those portions of Colchester and Hancock south of the East Branch of the Delaware River.

Dutchess: All of the county except for the towns of Fishkill, East Fishkill, and Beacon.

Greene: That portion of the county south of a line following the south limits of the city of Catskill in a Westerly direction from the Hudson River to Highway 23A along 23A to the road following the Little Westkill and continuing along this road to Delaware County.

**WAGES**

---IMPORTANT NOTE: Applies to all electrical wiring of single or multiple family dwellings and apartments up to and including two (2) stories that do not exceed four (4) unit apartments.

Per hour:

	07/01/2023	04/01/2024
Electrician Wireman/ Technician Electrical/Technician Projects under \$ 250,000.00	\$ 45.50 + 9.00*	\$ 46.50 + 9.50*
over \$ 250,000.00	\$ 49.50 + 9.00*	\$ 50.50 + 9.50*

SHIFT DIFFERENTIAL: On Public Work in New York State when shift work is mandated either in the job specifications or by the contracting agency, the following rates apply:

Shift worked between 4:30pm & 12:30am

Electrical/Technician Projects under \$ 250,000.00	\$ 53.39 + 9.00*	\$ 54.56 + 9.50*
over \$ 250,000.00	\$ 58.08 + 9.00*	\$ 59.30 + 9.50*

Shift worked between 12:30am & 8:30am

Electrical/Technician Projects under \$ 250,000.00	\$ 59.81 + 9.00*	\$ 61.12 + 9.50*
over \$ 250,000.00	\$ 65.06 + 9.00*	\$ 66.35 + 9.50*



\*For all hours paid straight or premium, not to be included in 3% calculation for supplemental benefits.

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (subject to overtime premiums):

- On jobs where employees are required to work from boatswain chairs, swinging scaffolds, etc., forty (40) feet or more above the ground, or under compressed air, using Scottair packs, or gas masks, they shall receive an additional \$2.00 per hour above the regular straight time rate.
- Journeyman Wireman working in Shafts, Tunnels or on Barges: \$5.00 above the Journeyman Wireman rate of pay
- Journeyman Wireman when performing welding or cable splicing: \$3.00 above the Journeyman Wireman rate of pay
- Journeyman Wireman required to have a NYS Asbestos Certificate: \$3.00 above the Journeyman Wireman rate of pay
- Journeyman Wireman required to have a CDL: \$3.00 above the Journeyman Wireman rate of pay.

**SUPPLEMENTAL BENEFITS**

Per hour:	07/01/2023	04/01/2024
Journeyman	\$ 28.68 plus 3% of straight or premium wage	\$ 29.68 plus 3% of straight or premium wage

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE  
 Overtime: See (5, 6, 13, 15, 16, 25) on HOLIDAY PAGE

When the holiday falls on a Saturday it is observed the Friday before. When the holiday falls on a Sunday it is observed on the Monday after.

**REGISTERED APPRENTICES**

WAGES:

(1)year terms at the following rates

07/01/2023	1st	2nd	3rd	4th	5th	6th
1st Shift	\$ 14.25 +1.00*	\$ 19.00 +1.00*	\$ 23.75 +1.50*	\$ 28.50 +2.00*	\$ 33.25 +2.50*	\$ 35.63 +2.50*
2nd Shift	16.72 +1.00*	22.29 +1.00*	27.86 +1.50*	33.43 +2.00*	39.00 +2.50*	41.79 +2.50*
3rd Shift	18.72 +1.00*	24.97 +1.00*	31.21 +1.50*	37.45 +2.00*	43.69 +2.50*	46.82 +2.50*
09/01/2023	1st	2nd	3rd	4th	5th	6th
1st Shift	\$ 15.68 +1.00*	\$ 19.00 +1.00*	\$ 23.75 +1.50*	\$ 28.50 +2.00*	\$ 33.25 +2.50*	\$ 35.63 +2.50*
2nd Shift	18.39 +1.00*	22.29 +1.00*	27.86 +1.50*	33.43 +2.00*	39.00 +2.50*	41.79 +2.50*
3rd Shift	20.60 +1.00*	24.97 +1.00*	31.21 +1.50*	47.45 +2.00*	43.69 +2.50*	46.82 +2.50*
04/01/2024	1st	2nd	3rd	4th	5th	6th
1st Shift	\$ 16.01 +1.00*	\$ 19.40 +1.00*	\$ 24.25 +1.50*	\$ 29.10 +2.00*	\$ 33.95 +2.50*	\$ 36.38 +2.50*
2nd Shift	18.78 +1.00*	22.76 +1.00*	28.45 +1.50*	34.13 +2.00*	39.82 +2.50*	42.67 +2.50*
3rd Shift	21.04 +1.00*	25.49 +1.00*	31.86 +1.50*	38.24 +2.00*	44.61 +2.50*	47.80 +2.50*
09/01/2024	1st	2nd	3rd	4th	5th	6th
1st Shift	\$ 16.01 +1.00*	\$ 19.40 +1.00*	\$ 24.25 +1.00*	\$ 29.10 +2.00*	\$ 33.95 +2.50*	\$ 36.38 +2.50*
2nd Shift	18.78 +1.00*	22.76 +1.00*	28.45 +1.00*	34.13 +2.00*	39.82 +2.50*	42.67 +2.50*
3rd Shift	21.04 +1.00*	25.49 +1.00*	31.86 +1.00*	38.24 +2.00*	44.61 +2.50*	47.80 +2.50*
04/01/2025	1st	2nd	3rd	4th	5th	6th
1st Shift	\$ 16.34 +1.00*	\$ 19.80 +1.00*	\$ 24.75 +1.00*	\$ 29.70 +2.00*	\$ 34.65 +2.50*	\$ 37.13 +2.50*
2nd Shift	19.17 +1.00*	23.23 +1.00*	29.03 +1.00*	34.84 +2.00*	40.64 +2.50*	43.55 +2.50*
3rd Shift	21.47 +1.00*	26.02 +1.00*	32.52 +1.00*	39.03 +2.00*	45.53 +2.50*	48.79 +2.50*

\*For all hours paid straight or premium, not to be included in 3% calculation for supplemental benefits.

**SUPPLEMENTAL BENEFITS per hour:**

**07/01/2023**

1st term	\$ 16.28 plus 3% of straight or premium wage
2nd term	\$ 16.28 plus 3% of straight or premium wage
3rd term	\$ 18.28 plus 3% of straight or premium wage
4th term	\$ 18.78 plus 3% of straight or premium wage
5th term	\$ 20.28 plus 3% of straight or premium wage
6th term	\$ 20.28 plus 3% of straight or premium wage

**09/01/2024**

1st term	\$ 16.28 plus 3% of straight or premium wage
2nd term	\$ 17.78 plus 3% of straight or premium wage
3rd term	\$ 18.78 plus 3% of straight or premium wage
4th term	\$ 19.78 plus 3% of straight or premium wage
5th term	\$ 21.28 plus 3% of straight or premium wage
6th term	\$ 21.28 plus 3% of straight or premium wage

11-363/2

**Elevator Constructor**

**04/01/2024**

**JOB DESCRIPTION** Elevator Constructor

**DISTRICT 1**

**ENTIRE COUNTIES**

Columbia, Dutchess, Greene, Orange, Putnam, Sullivan, Ulster

**PARTIAL COUNTIES**

Delaware: Towns of Andes, Bovina, Colchester, Davenport, Delhi, Harpersfield, Hemdon, Kortright, Meredith, Middletown, Roxbury, Hancock & Stamford

Rockland: Only the Township of Stony Point.

Westchester: Only the Townships of Bedford, Lewisboro, Cortland, Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

**WAGES**

Per Hour	07/01/2023	01/01/2024
Mechanic	\$ 67.35	\$ 70.15
Helper	70% of Mechanic Wage Rate	70% of Mechanic Wage Rate

NOTE - The "Employer Registration" (30.1) use of a '4 Day/10 Hour Work schedules' will no longer be accepted or processed. All registered projects prior to June 30, 2023 will expire within the granted time frame.

For Pre-Registered Projects 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. Tuesday thru Friday may be worked with no make-up day. For further clarification contact your local Bureau Office.

**SUPPLEMENTAL BENEFITS**

Per hour	07/01/2023	01/01/2024
Journey person/Helper	\$ 37.335*	\$ 37.885*

(\*)Plus 6% of regular hourly if less than 5 years of service. Plus 8% of regular 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 Journeyperson/Helper

1-138

**Glazier** **04/01/2024**

**JOB DESCRIPTION** Glazier

**DISTRICT 8**

**ENTIRE COUNTIES**

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

**WAGES**

Per hour: 7/01/2023

Glazier & Glass Tinting	\$ 61.64
*Scaffolding	65.64
Window Film	
**Repair & Maintenance	30.76

\*Scaffolding includes swing scaffold, mechanical equipment, scissor jacks, man lifts, booms & buckets 30' or more, but not pipe scaffolding.

\*\*Repair & Maintenance- All repair & maintenance work on a particular building whenever performed, where the total cumulative Repair & Maintenance contract value is under \$184,000.

**SUPPLEMENTAL BENEFITS**

Per hour: 7/01/2023

Glazier & Glass Tinting	\$ 40.20
Window Film	
Repair & Maintenance	23.19

**OVERTIME PAY**

See (B, E, Q, V) on OVERTIME PAGE

For 'Repair & Maintenance' see (B, B2, I, S) on overtime page.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (4, 6, 16, 25) on HOLIDAY PAGE

For 'Repair & Maintenance'

Paid: See(5, 6, 16, 25)

Overtime: See(5, 6, 16, 25)

**REGISTERED APPRENTICES**

Wage per hour:

(1) year terms at the following wage rates:

7/01/2023

1st term	\$ 21.93
2nd term	30.05
3rd term	39.95
4th term	48.97

Supplemental Benefits:

(Per hour)

1st term	\$ 18.25
2nd term	25.97
3rd term	31.27
4th term	34.32

8-1087 (DC9 NYC)

**Insulator - Heat & Frost** **04/01/2024**

**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	07/01/2023	05/01/2024 Additional
Asbestos Worker*	\$ 39.68	+ \$2.00**
Insulator*	39.68	
Firestopping Worker*	33.73	

(\*) On Mechanical Systems only.

(\*\*) To be allocated at later date.

On government mandated shift work additional 12% of wage for all shifts starting after 3:30 P.M.

**SUPPLEMENTAL BENEFITS**

Per hour

Journeyman \$ 25.64

**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 \$ 25.64

1-40

**Ironworker**

**04/01/2024**

**JOB DESCRIPTION** Ironworker

**DISTRICT** 11

**ENTIRE COUNTIES**

Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster

**WAGES**

Per hour:

	07/01/2023	07/01/2024 Additional	07/01/2025 Additional	07/01/2026 Additional
Structural	\$ 52.63	\$ 2.00*	\$ 2.00*	\$2.00*
Reinforcing*	52.63	2.00*	2.00*	2.00*
Ornamental	52.63	2.00*	2.00*	2.00*
Chain Link Fence	52.63	2.00*	2.00*	2.00*

\* To be allocated at a later date.

NOTE: For Reinforcing classification ONLY, Ironworker 4-46Reinf rates apply in Rockland County's southern section (south of Convent Road and east of Blue Hills Road).

On Government Mandated Irregular Work Days or Shift Work, the following wage will be paid:

1st Shift	\$ 52.63
2nd Shift	67.34
3rd Shift	72.24

\*\*Note- Any shift that works past 12:00 midnight shall receive the 3rd shift differential.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman \$ 43.47

**OVERTIME PAY**

See (B1, Q, V) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE  
 Overtime: See (5, 6, 16) on HOLIDAY PAGE

If a holiday falls on Saturday, it will be observed Friday. If a holiday falls on Sunday, it will be observed Monday.

**REGISTERED APPRENTICES**

Wages:

(1) year terms at the following wage:

	1st yr	2nd yr	3rd yr	4th yr
1st Shift	\$ 26.32	\$ 31.58	\$ 36.85	\$ 42.10
2nd Shift	36.16	42.40	48.64	54.86
3rd Shift	39.45	46.00	52.57	59.12

Supplemental Benefits per hour:

1st year	\$ 37.35
2nd year	38.57
3rd year	39.80
4th year	41.02

11-417

**Laborer - Building**

**04/01/2024**

**JOB DESCRIPTION** Laborer - Building

**DISTRICT** 11

**ENTIRE COUNTIES**

Orange, Sullivan, Ulster

**PARTIAL COUNTIES**

Delaware: Only the Townships of Andes, Bovina, Davenport, Delhi, Franklin, Hamden, Harpersfield, Kortright, Meredith, Middletown, Roxbury, and Stamford.

Greene: Only the Township of Catskill.

**WAGES**

Class 1: Custodial and janitorial work, general cleanup, and flag person.

Class 2: Concrete laborer, mason tending, hod carrier, signal person, pressure blasting and washing, chainsaw, demo saw, jackhammers, general labor.

Class 3: Jumping jack, air track drills, grading, explosive handler and blaster, grade checker. When OSHA requires negative pressure respirator.

Class 4: Environmental work including but not limited to asbestos abatement, toxic and hazardous abatement, lead abatement work, mold remediation and biohazards.

WAGES: (per hour)	07/01/2023	06/01/2024	06/01/2025 Additional	06/01/2026 Additional
Class 1	\$ 41.65	\$ 43.15	\$ 2.69*	\$ 2.79*
Class 2	42.40	43.95	2.72*	2.82*
Class 3	44.30	45.90	2.79*	2.89*
Class 4	47.30	49.00	2.90*	3.00*

\*To be allocated at a later date.

These rates will cover all work within five feet of the building foundation line.

Shift Differential: On all Governmental mandated irregular or off shift work, an additional 25% of wage is required. The 25% shift differential will be paid on public works contract for shifts or irregular workdays outside the normal working hours for 2nd and 3rd shifts or irregular work day or when mandated or required by state, federal, county, local or other governmental agency contracts.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman	\$ 32.40	\$ 33.50
Shift	39.46	40.84

**OVERTIME PAY**

See (B, \*E, E5, \*\*Q) on OVERTIME PAGE

\*For first 8 hours on Saturday

\*\*When an employee is required to work on a holiday which falls on a Sunday the employee shall be paid three (3) times the hourly rate and one (1) hour benefits for every hour worked. When an employee is required to work on a holiday which falls on a Saturday the employee shall be paid two and a half (2.5) times the hourly rate and one hour benefits for every hour worked.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE  
 Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

Holidays that fall on Saturday shall be observed on Friday, when holidays fall on Sunday they shall be observed on Monday.

**REGISTERED APPRENTICES**

(1000) hour terms at the following wages.

	07/01/2023	06/01/2024
1st term	\$ 27.05	\$ 28.05
2nd term	31.25	32.35
3rd term	35.40	36.70
4th term	39.55	41.00

Supplemental Benefits per hour:

All Terms Regular	\$ 28.33	\$ 29.23
All Terms Shift Rate	34.27	TBD

11-17.BA

**Laborer - Heavy&Highway**

**04/01/2024**

**JOB DESCRIPTION** Laborer - Heavy&Highway

**DISTRICT** 11

**ENTIRE COUNTIES**

Orange, Sullivan, Ulster

**PARTIAL COUNTIES**

Delaware: Only the Townships of Andes, Bovina, Middletown, Roxbury, Franklin, Hamden, Stamford, Delhi, Kortright, Harpersfield, Meredith, and Davenport.

Greene: Only the Township of Catskill.

**WAGES**

CLASS 1: Flagperson, gateperson.

CLASS 2: General laborer, chuck tender, nipper, powder carrier, magazine tender, concrete men, vibrator men, mason tender, mortar men, traffic control, custodial work, temporary heat, pump men, pit men, dump men, asphalt men, joint setter, signalman, pipe men, riprap, dry stone layers, jack hammer, bush hammer, pavement breaker, men on mulching & seeding machines, all seeding & sod laying, landscape work, walk behind self-propelled power saws, grinder, walk behind rollers and tampers of all types, burner men, filling and wiring of baskets for gabion walls, chain saw operator, railroad track laborers, power buggy, plaster & acoustic pump, power brush cutter, retention liners, walk behind surface planer, chipping hammer, manhole, catch basin or inlet installing, mortar mixer, laser men. \*Micropaving and crack sealing.

CLASS 3: Asbestos, toxic, bio remediation and phyto-remediation, lead or hazardous materials abatement when certification or license is required, Drilling Equipment Only Where a Separate Air Compressor Unit Supplies Power.

CLASS 4: Asphalt screedman, blaster, all laborers involved in pipejacking and boring operations not exceeding more than 10 feet into pipe, boring or drilled area.

WAGES: (per hour)	07/01/2023	06/01/2024
Class 1	\$ 40.80	Additional \$ 2.65**
Class 2	44.80	2.35**
Class 3	49.40	2.45**
Class 4	54.70	2.20**

\* When laborers are performing micro paving, crack sealing or slurry application when not part of asphalt prep operations laborers shall receive an additional \$2.50 per hour over rate.

\*\*To be allocated at a later date.

SHIFT DIFFERENTIAL: Night work and irregular shift require 20% increase on wages for all Government mandated night and irregular shift work.

NOTE - The 'Employer Registration' (30.1) use of a '4 Day/10 Hour Work schedules' will no longer be accepted or processed. All registered projects prior to June 30,2023 will expire within the granted time frame.

For Pre-Registered Projects 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. Tuesday thru Friday may be worked with no make-up day. For further clarification contact your local Bureau Office.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman \$ 32.28

Shift 37.96

**OVERTIME PAY**

See (B, E, P, \*R, \*\*S, \*\*\*T, X) on OVERTIME PAGE

\*For Mon-Fri Holidays, Double Benefits to be paid for all hours worked.

\*\*For Saturday Holidays, Two and one Half Benefits for all hours worked.

\*\*\*For Sunday Holidays, Triple Benefits for all hours worked.

**HOLIDAY**

Paid: See (5, 6, 15, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 25) on HOLIDAY PAGE

To be eligible for a paid holiday, an employee must work at least two (2) days in the calendar week or payroll week in which the holiday falls.

**REGISTERED APPRENTICES**

(1000) hour terms at the following wages.

	07/01/2023	06/01/2024
1st term	\$ 27.05	\$ 28.05
2nd term	31.25	32.35
3rd term	35.40	36.70
4th term	39.55	41.00

Supplemental Benefits per hour:

All Terms Regular	\$ 28.33	\$ 29.23
All Terms Shift Rate	33.08	TBD

11-17.1H/H

**Laborer - Tunnel**

**04/01/2024**

**JOB DESCRIPTION** Laborer - Tunnel

**DISTRICT** 11

**ENTIRE COUNTIES**

Columbia, Dutchess, Greene, Orange, Otsego, Putnam, Rockland, Sullivan, Ulster, Westchester

**PARTIAL COUNTIES**

Chenango: Townships of Columbus, Sherburne and New Berlin.

Delaware: Townships of Andes, Bovina, Middletown, Roxbury, Franklin, Hamden, Stamford, Delhi, Kortright, Harpersfield, Merideth and Davenport.

**WAGES**

Class 1: All support laborers/sandhogs working above the shaft or tunnel.

Class 2: All laborers/sandhogs working in the shaft or tunnel.

Class 4: Safety Miners

Class 5: Site work related to Shaft/Tunnel

WAGES: (per hour)

	07/01/2023	06/01/2024	06/01/2025
Class 1	\$ 55.55	\$ 57.05	\$ 58.55
Class 2	57.70	59.20	60.70
Class 4	64.10	65.60	67.10
Class 5	47.65	49.90	51.40

Toxic and hazardous waste, lead abatement and asbestos abatement work will be paid an additional \$ 3.00 an hour.

SHIFT DIFFERENTIAL...On all Government mandated irregular shift work:

- Employee shall be paid at time and one half the regular rate Monday through Friday.
- Saturday shall be paid at 1.65 times the regular rate.
- Sunday shall be paid at 2.15 times the regular rate.

**SUPPLEMENTAL BENEFITS**

Per hour:

Benefit 1	\$ 35.73	\$ 36.98	\$ 38.23
Benefit 2	51.01	TBD	TBD
Benefit 3	71.28	TBD	TBD

Benefit 1 applies to straight time hours, paid holidays not worked.

Benefit 2 applies to over 8 hours in a day (M-F), irregular shift work hours worked, and Saturday hours worked.

Benefit 3 applies to Sunday and Holiday hours worked.

**OVERTIME PAY**

See (B, E, Q, X) on OVERTIME PAGE

**HOLIDAY**

Paid: See (5, 6, 15, 25) on HOLIDAY PAGE  
 Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE

When a recognized Holidays falls on Saturday or Sunday, holidays falling on Saturday shall be recognized or observed on Friday and holidays falling on Sunday shall be recognized or observed on Monday. Employees ordered to work on the Saturday or Sunday of the holiday or on the recognized or the observed Friday or Monday for those holidays falling on Saturday or Sunday shall receive double time the established rate and benefits for the holiday.

**REGISTERED APPRENTICES**

FOR APPRENTICE RATES, refer to the appropriate Laborer Heavy & Highway wage rate contained in the wage schedule for the County and location where the work is to be performed.

11-17/60/235/754Tun

**Lineman Electrician**

**04/01/2024**

**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**

A 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, assembly of all electrical materials, conduit, pipe, or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

A 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/truck driver may assist in installing conduit, pipe, cables and equipment.

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines. Also includes digging of holes for poles, anchors, footer, and foundations for electrical equipment.

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)

Per hour:	07/01/2023	05/06/2024
<b>Group A:</b>		
Lineman, Technician	\$ 57.40	\$ 58.90
Crane, Crawler Backhoe	57.40	58.90
Welder, Cable Splicer	57.40	58.90
<b>Group B:</b>		
Digging Mach. Operator	51.66	53.01
Tractor Trailer Driver	48.79	50.07
Groundman, Truck Driver	45.92	47.12
Equipment Mechanic	45.92	47.12
Flagman	34.44	35.34

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)

<b>Group A:</b>		
Lineman, Technician	\$ 57.40	\$ 58.90
Crane, Crawler Backhoe	57.40	58.90
Cable Splicer	63.14	64.79
Certified Welder,		
Pipe Type Cable	60.27	61.85

Group B:



Digging Mach. Operator	51.66	53.01
Tractor Trailer Driver	48.79	50.07
Groundman, Truck Driver	45.92	47.12
Equipment Mechanic	45.92	47.12
Flagman	34.44	35.34

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)

Group A:

Lineman, Tech, Welder	\$ 58.72	\$ 60.22
Crane, Crawler Backhoe	58.72	60.22
Cable Splicer	64.59	66.24
Certified Welder, Pipe Type Cable	61.66	63.23

Group B:

Digging Mach. Operator	52.85	54.20
Tractor Trailer Driver	49.91	51.19
Groundman, Truck Driver	46.98	48.18
Equipment Mechanic	46.98	48.18
Flagman	35.23	36.13

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)

Group A:

Lineman, Tech, Welder	\$ 59.91	\$ 61.41
Crane, Crawler Backhoe	59.91	61.41
Cable Splicer	59.91	61.41

Group B:

Digging Mach. Operator	53.92	55.27
Tractor Trailer Driver	50.92	52.20
Groundman, Truck Driver	47.93	49.13
Equipment Mechanic	47.93	49.13
Flagman	35.95	36.85

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 %

NOTE - The "Employer Registration" (30.1) use of a '4 Day/10 Hour Work schedules' will no longer be accepted or processed. All registered projects prior to June 30, 2023 will expire within the granted time frame.

For Pre-Registered Projects 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. Tuesday thru Friday may be worked with no make-up day. For further clarification contact your local Bureau Office.

**SUPPLEMENTAL BENEFITS**

Per hour:

	07/01/2023	05/06/2024
Group A	\$ 29.40	\$ 30.90
	*plus 7% of the hourly wage paid	*plus 7% of the hourly wage paid

Group B	\$ 26.40	\$ 26.90
	*plus 7% of the hourly wage paid	*plus 7% of the hourly wage paid

\*The 7% is based on the hourly wage paid, straight time or premium time.

**OVERTIME PAY**

See (B, E, Q, X) 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 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 per hour:

07/01/2023	05/06/2024
\$ 26.40	\$ 26.90
*plus 7% of the hourly wage paid	*plus 7% of the hourly wage paid

\*The 7% is based on the hourly wage paid, straight time or premium time.

6-1249a

**Lineman Electrician - Teledata**

**04/01/2024**

**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).

	07/01/2023	01/01/2024	01/01/2025
Cable Splicer	\$ 37.73	\$ 39.24	\$ 40.81
Installer, Repairman	\$ 35.81	\$ 37.24	\$ 38.73
Teledata Lineman	\$ 35.81	\$ 37.24	\$ 38.73
Tech., Equip. Operator	\$ 35.81	\$ 37.24	\$ 38.73
Groundman	\$ 18.98	\$ 19.74	\$ 20.53

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:	07/01/2023	01/01/2024	01/01/2025
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Journeyman	\$ 5.70	\$ 5.70	\$ 5.70
	*plus 3% of the hourly wage paid	*plus 3% of the hourly wage paid	*plus 3% of the hourly wage paid

\*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 04/01/2024**

**JOB DESCRIPTION** Lineman Electrician - Traffic Signal, Lighting **DISTRICT 6**

**ENTIRE COUNTIES**

Columbia, Dutchess, Orange, Putnam, Rockland, Ulster

**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/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/truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.  
 (Ref #14.01.02)

Per hour:	07/01/2023	05/06/2024
Group A:		
Lineman, Technician	\$ 50.60	\$ 51.82
Crane, Crawler Backhoe	50.60	51.82
Certified Welder	53.13	54.41
Group B:		
Digging Machine	45.54	46.64
Tractor Trailer Driver	43.01	44.05
Groundman, Truck Driver	40.48	41.46
Equipment Mechanic	40.48	41.46
Flagman	30.36	31.09

Above rates are applicable for installation, testing, operation, maintenance and repair on all Traffic Control (Signal) and Illumination (Lighting) projects, Traffic Monitoring Systems, and Road Weather Information Systems. Includes digging of holes for poles, anchors, footer foundations for electrical equipment; assembly of all electrical materials or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

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%

NOTE - The "Employer Registration" (30.1) use of a '4 Day/10 Hour Work schedules' will no longer be accepted or processed. All registered projects prior to June 30, 2023 will expire within the granted time frame.

For Pre-Registered Projects 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. Tuesday thru Friday may be worked with no make-up day. For further clarification contact your local Bureau Office.

**SUPPLEMENTAL BENEFITS**

Per hour worked (but also required on non-worked holidays):

	07/01/2023	05/06/2024
Group A:	\$ 29.40 *plus 7% of the hourly wage paid	\$ 30.90 *plus 7% of the hourly wage paid
Group B	\$ 26.40 *plus 7% of the hourly wage paid	\$ 26.90 *plus 7% of the hourly wage paid

\*The 7% is based on the hourly wage paid, straight time or premium time.

**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 and Governor of NYS Election Day.

Overtime: See ( 5, 6, 8, 13, 25 ) on HOLIDAY PAGE and 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 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 per hour:

	07/01/2023	05/06/2024
	\$ 26.40 *plus 7% of the hourly wage paid	\$ 26.90 *plus 7% of the hourly wage paid

\*The 7% is based on the hourly wage paid, straight time or premium time.

6-1249aReg8LT

**Lineman Electrician - Tree Trimmer**

**04/01/2024**

**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**

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.

Per hour:	07/01/2023	12/31/2023
Tree Trimmer	\$ 29.80	\$ 31.44
Equipment Operator	26.35	27.80
Equipment Mechanic	26.35	27.80
Truck Driver	21.95	23.15
Groundman	18.07	19.07

Flag person 14.20 14.20\*

\*NOTE- Rate effective on 01/01/2024 - \$15.00 due to minimum wage increase

**SUPPLEMENTAL BENEFITS**

Per hour:

	07/01/2023	12/31/2023
Journeyman	\$ 10.48	\$ 10.48
	*plus 4.5% of the hourly wage paid	*plus 4.5% of the hourly wage paid

\* The 4.5% is based on the hourly wage paid, straight time rate or premium rate.

**OVERTIME PAY**

See (B, E, Q, X) 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) 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**

**04/01/2024**

**JOB DESCRIPTION** Mason - Building

**DISTRICT** 11

**ENTIRE COUNTIES**

Dutchess, Sullivan, Ulster

**PARTIAL COUNTIES**

Orange: Entire county except the Township of Tuxedo.

**WAGES**

Per hour:

07/01/2023

Bricklayer	\$ 45.00
Cement Mason	45.00
Plasterer/Stone Mason	45.00
Pointer/Caulker	45.00

Additional \$1.00 per hour for power saw work

Additional \$0.50 per hour for swing scaffold or staging work

SHIFT WORK: When shift work or an irregular workday is mandated or required by state, federal, county, local or other governmental agency contracts, the following premiums apply:

Irregular workday requires 15% premium

Second shift an additional 15% of wage plus benefits to be paid

Third shift an additional 25% of wage plus benefits to be paid

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman \$ 37.39

**OVERTIME PAY**

Cement Mason See ( B, E, Q, W ) on OVERTIME PAGE.

All Others See ( B, E, Q ) on OVERTIME PAGE.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

**REGISTERED APPRENTICES**

Wages per hour:

750 hour terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour

750 hour terms at the following percentage of journeyman supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Apprentices indentured before June 1st, 2011 receive full journeyman benefits

11-5du-b

**Mason - Building** **04/01/2024**

**JOB DESCRIPTION** Mason - Building

**DISTRICT** 9

**ENTIRE COUNTIES**

Dutchess, Orange, Putnam, Sullivan, Ulster

**WAGES**

Per hour:

07/01/2023	12/04/2023	06/03/2024
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Building:

Additional

Tile, Marble,& Terrazzo

Mechanic/Setter

\$ 57.29	\$ 57.72	\$ 0.64
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**SUPPLEMENTAL BENEFITS**

Per Hour:

Journeyworker:	\$ 23.06*	\$ 23.26*
	+ \$7.68	+\$7.69

\* This portion of benefits subject to same premium rate as shown for overtime wages.

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

Double time rate applies after 10 hours

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wage per hour:

(Counties of Orange & Putnam)

750 hour terms at the following wage rate:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1-	751-	1501-	2251-	3001-	3751-	4501-	5251-	6001-	6751-
750	1500	2250	3000	3750	4500	5250	6000	6750	7500
07/01/2023									
\$21.70	\$26.66	\$33.75	\$38.69	\$42.25	\$45.70	\$49.29	\$54.23	\$57.09	\$61.25
12/04/2023									
\$21.96	\$26.95	\$34.10	\$39.08	\$42.68	\$46.16	\$49.79	\$54.77	\$57.66	\$61.90

Supplemental Benefits per hour:

(Counties of Orange & Putnam)

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
07/01/2023									
\$12.55*	\$12.55*	\$15.36*	\$15.36*	\$16.36*	\$17.86*	\$18.86*	\$18.86*	\$16.86*	\$22.11*
+\$0.73	+\$0.78	+\$0.88	+\$0.88	+\$1.37	+\$1.42	+\$1.83	+\$1.88	+\$6.03	+\$6.61

12/04/2023	\$12.55*	\$12.55*	\$15.36*	\$15.36*	\$16.36*	\$17.86*	\$18.86*	\$18.86*	\$16.86*	\$22.11*
	+\$0.73	+\$0.78	+\$0.89	+\$0.94	+\$1.38	+\$1.43	+\$1.84	+\$1.89	+\$6.04	+\$6.62

Wages per hour:  
 (Counties of Dutchess, Sullivan, Ulster)

750 hour terms at the following wage rate:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1-	751-	1501-	2251-	3001-	3751-	4501-	5251-	6001-	6751-
750	1500	2250	3000	3750	4500	5250	6000	6750	7500

07/01/2023	\$19.83	\$23.92	\$25.89	\$29.98	\$32.74	\$36.32	\$39.61	\$42.71	\$44.31	\$47.73
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Supplemental Benefits per hour:  
 (Counties of Dutchess, Sullivan, Ulster)

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
07/01/2023	\$12.55*	\$12.55*	\$14.66*	\$14.66*	\$15.60*	\$16.16*	\$16.66*	\$17.66*	\$15.66*	\$20.41*
	+\$0.65	+\$0.69	+\$0.74	+\$0.78	+\$1.15	+\$1.19	+\$1.53	+\$1.57	+\$6.09	+\$6.18

\* This portion of benefits subject to same premium rate as shown for overtime wages.

9-7/52B

**Mason - Building** **04/01/2024**

**JOB DESCRIPTION** Mason - Building **DISTRICT 9**

**ENTIRE COUNTIES**  
 Dutchess, Orange, Putnam, Sullivan, Ulster

**WAGES**  
 Per hour: 07/01/2023 12/04/2023 06/03/2024

Building Additional

Tile, Marble, &  
 Terrazzo Finisher \$ 47.06 \$ 47.51 \$ 0.54

**SUPPLEMENTAL BENEFITS**  
 Journeyworker:  
 Per Hour \$ 20.16\* \$ 20.26\*  
+ \$7.55 + \$7.55

\*This portion of benefits subject to same premium rate as shown for overtime wages

**OVERTIME PAY**  
 See (A, \*E, Q) on OVERTIME PAGE  
 Double time rate applies after 10 hours on Saturdays.

**HOLIDAY**  
 Paid: See (1) on HOLIDAY PAGE  
 Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

9-7/88B-tf

**Mason - Building** **04/01/2024**

**JOB DESCRIPTION** Mason - Building **DISTRICT 9**

**ENTIRE COUNTIES**  
 Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

**WAGES**  
 Per Hour:

	07/01/2023	7/03/2023						
Marble Cutters & Setters	\$ 62.82	\$ 63.12						
<b>SUPPLEMENTAL BENEFITS</b>								
Per Hour:								
Journeyworker	\$ 39.03	\$ 39.34						
<b>OVERTIME PAY</b>								
See (B, E, Q, V) on OVERTIME PAGE								
<b>HOLIDAY</b>								
Paid:	See (1) on HOLIDAY PAGE							
Overtime:	See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE							
<b>REGISTERED APPRENTICES</b>								
Wage Per Hour:								
07/01/2023								
750 hour terms at the following wage								
1st	2nd	3rd	4th	5th	6th	7th	8th	
0- 3000	3001- 3750	3751- 4500	4501- 5250	5251- 6000	6001- 6750	6751- 7500	7500+	
\$ 26.42	\$ 39.62	\$ 42.91	\$ 46.22	\$ 49.52	\$ 53.38	\$ 59.67	\$ 62.82	
Supplemental Benefits per hour:								
07/01/2023								
1st	2nd	3rd	4th	5th	6th	7th	8th	
\$ 25.38	\$ 28.86	\$ 29.74	\$ 30.60	\$ 31.48	\$ 36.44	\$ 38.17	\$ 39.03	
07/03/2023								
Wage Per Hour:								
750 hour terms at the following wage.								
1st	2nd	3rd	4th	5th	6th	7th	8th	
0- 3000	3001- 3750	3751- 4500	4501- 5250	5251- 6000	6001- 6750	6751- 7500	7500+	
\$ 26.60	\$ 39.82	\$ 43.13	\$ 46.45	\$ 49.78	\$ 53.64	\$ 59.95	\$ 63.12	
Supplemental Benefits Per Hour:								
1st	2nd	3rd	4th	5th	6th	7th	8th	
\$ 25.54	\$ 29.09	\$ 29.97	\$ 30.84	\$ 31.72	\$ 36.73	\$ 38.48	\$ 39.34	

9-7/4

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**Mason - Heavy&Highway** **04/01/2024**

**JOB DESCRIPTION** Mason - Heavy&Highway

**DISTRICT** 11

**ENTIRE COUNTIES**  
 Dutchess, Sullivan, Ulster

**PARTIAL COUNTIES**  
 Orange: Entire county except the Township of Tuxedo.

**WAGES**

Per hour: 07/01/2023

Bricklayer	\$ 45.50
Cement Mason	45.50
Marble/Stone Mason	45.50
Plasterer	45.50
Pointer/Caulker	45.50

Additional \$1.00 per hour for power saw work  
 Additional \$0.50 per hour for swing scaffold or staging work



SHIFT WORK: When shift work or an irregular workday is mandated or required by state, federal, county, local or other governmental contracts, the following rates apply:

- Irregular workday requires 15% premium
- Second shift an additional 15% of wage plus benefits to be paid
- Third shift an additional 25% of wage plus benefits to be paid

**SUPPLEMENTAL BENEFITS**

Per hour:  
 Journeyman \$ 37.39

**OVERTIME PAY**

Cement Mason See ( B, E, Q, W )  
 All Others See ( B, E, Q )

**HOLIDAY**

Paid: See (5, 6, 16, 25) on HOLIDAY PAGE  
 Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

- Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.
- Supplemental Benefits are not paid for paid Holiday
- If Holiday is worked, Supplemental Benefits are paid for hours worked.
- Whenever an Employee works within three (3) calendar days before a holiday, the Employee shall be paid for the Holiday.

**REGISTERED APPRENTICES**

Wages per hour:

750 hour terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour

750 hour terms at the following percentage of journeyman supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Apprentices indentured before June 1st, 2011 receive full journeyman benefits

11-5du-H/H

**Millwright 04/01/2024**

**JOB DESCRIPTION** Millwright

**DISTRICT 6**

**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

**WAGES**

THE FOLLOWING RATE APPLIES TO ANY GAS/STEAM TURBINE AND OR RELATED COMPONENT WORK, INCLUDING NEW INSTALLATIONS OR MAINTENANCE AND ANY/ALL WORK PERFORMED WITHIN THE PROPERTY LIMITS OF A NUCLEAR FACILITY.

Per hour:	07/01/2023	07/01/2024	07/01/2025
Millwright - Power Generation	\$ 43.05	Additional \$ 2.50	Additional \$2.50

NOTE: ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):

- Certified Welders shall receive an additional \$1.75 per hour provided he/she is directed to perform certified welding.
- 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 an additional \$1.50 per hour.
- An employee performing the work of a machinist shall receive an additional \$2.00 per hour. 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 \$1.00 per hour.

**SUPPLEMENTAL BENEFITS**

Per hour paid:

Journeyman \$ 27.40\*

\*NOTE: Subject to OT premium

**OVERTIME PAY**

See (B, E, E2, Q, V) on OVERTIME PAGE

**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: One year terms at the following percentage of Journeyman's wage:

Appr. 1st year	65 %*
Appr. 2nd year	75 %*
Appr. 3rd year	80 %*
Appr. 4th year	90 %*

\*NOTE: Additional premium for the following work listed below:

Certified Welder	\$ 1.75
Hazardous Waste Work	1.50
Machinist	2.00
Underground (500' and below)	1.00

SUPPLEMENTAL BENEFITS per hour:

Appr. 1st year	\$ 11.89
Appr. 2nd year	22.75
Appr. 3rd year	24.30
Appr. 4th year	25.85

6-1163Power

**Millwright**

**04/01/2024**

**JOB DESCRIPTION** Millwright

**DISTRICT 2**

**ENTIRE COUNTIES**

Sullivan, Ulster

**WAGES**

Per hour:	07/01/2023	07/01/2024 Additional	07/01/2025 Additional
Building	\$ 40.34	\$ 2.00*	\$ 2.00*
Heavy & Highway	43.34	2.50*	2.00*

\*To be allocated at a later date

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 \$1.00.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman	\$ 31.19
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**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 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 Journeyman's rate.

1st	2nd	3rd	4th
65%	75%	80%	90%

Supplemental Benefits per hour:

Apprentices:

1st term	\$ 13.65
2nd term	25.93
3rd term	27.68
4th term	29.44

2-1163.3

**Operating Engineer - Building / Heavy&Highway**

**04/01/2024**

**JOB DESCRIPTION** Operating Engineer - Building / Heavy&Highway

**DISTRICT** 11

**ENTIRE COUNTIES**

Delaware, Orange, Rockland, Sullivan, Ulster

**WAGES**

CLASS A5: Cranes, Derricks and Pile Drivers 100 tons or more and Tower Cranes, with 140ft boom and over.

CLASS A4: Cranes, Derricks and Pile Drivers 100 tons or more and Tower Cranes, with 100ft to 139ft boom.

CLASS A3: Cranes, Derricks and Pile Drivers 100 tons or more and Tower Cranes with a boom under 100ft.

CLASS A2: Cranes, Derricks and Pile Drivers less than 100 tons with 140ft boom and over.

CLASS A1: Cranes, Derricks and Pile Drivers less than 100 tons with a 100ft to 139ft boom.

CLASS A: Cranes, Derricks and Pile Drivers less than 100 tons with a boom under 100ft.; Autograde Combination Subgrader, Base Material Spreader and Base Trimmer (CMI and Similar Types); Autograde Pavement profiler (CMI and Similar Types); Autograde Pavement Profiler and Recycle type (CMI and Similar Type); Autograde Placer-Trimmer-Spreader Comb. (CMI & Similar types); Autograde Slipform Paver (CMI & Similar Types); Central Power Plants (all types); Chief of Party; Concrete Paving Machines; Drill (Bauer, AMI and Similar Types); Drillmaster, Quarrymaster (Down the Hole Drill), Rotary Drill, Self-Propelled Hydraulic Drill, Self-Powered Drill; Draglines; Elevator Graders; Excavator; Front End Loaders (5 yds. and over); Gradalls; Grader-Rago; Helicopters (Co-Pilot); Helicopters (Communications Engineer);Juntann Pile Driver; Locomotive (Large); Mucking Machines; Pavement & Concrete Breaker, i.e., Superhammer & Hoe Ram; Roadway Surface Grinder; Prentice Truck; Scooper (Loader and Shovel); Shovels; Tree Chopper with Boom; Trench Machines (Cable Plow); Tunnel Boring Machine; Vacuum Truck

CLASS B: "A" Frame; Backhoe (Combination); Boom Attachment on Loaders (Rate based on size of Bucket) not applicable to Pipehook; Boring and Drilling Machines; Brush Chopper, Shredder and Tree Shredder, Tree Shearer; Bulldozer(Fine Grade); Cableways; Carryalls; Concrete Pump; Concrete Pumping System, Pump Concrete and Similar Types; Conveyors (125 ft. and over); Drill Doctor (duties incl. Dust Collector Maintenance); Front End Loaders (2 yds. but less than 5 yds.); Graders (Finish); Groove Cutting Machine (Ride on Type); Heater Planer; Hoists (all type Hoists, shall also include Steam, Gas, Diesel, Electric, Air Hydraulic, Single and Double Drum, Concrete, Brick Shaft Caisson, Snorkel Roof, and/or any other Similar Type Hoisting Machines, portable or stationary, except Chicago Boom Type); Long Boom Rate to be applied if Hoist is "Outside Material Tower Hoist"\*\*\*; Hydraulic Cranes-10 tons and under; Hydraulic Dredge; Hydro-Axe; Hydro Blaster; Jacks-Screw Air Hydraulic Power Operated Unit or Console Type (not hand Jack or Pile Load Test Type); Log Skidder; Pans; Pavers (all) concrete; Plate and Frame Filter Press; Pumpcrete Machines, Squeezcrete & Concrete Pumping (regardless of size); Scrapers; Side Booms; "Straddle"Carrier-Ross and similar types; Winch Trucks (Hoisting); Whip Hammer

CLASS C: Asphalt Curbing Machine; Asphalt Plant Engineer; Asphalt Spreader; Autograde Tube Finisher and Texturing Machine (CMI & Similar types); Autograde Curecrete Machine (CMI & Similar Types); Autograde Curb Trimmer & Sidewalk, Shoulder, Slipform (CMI & Similar Types); Bar Bending Machines (Power); Barrier Moving Machine-Zipper; Batches, Batching Plant and Crusher on Site; Belt Conveyor Systems; Boom Type Skimmer Machines; Bridge Deck Finisher; Bulldozer(except fine grade); Car Dumpers (Railroad); Compressor and Blower Type Units (used independently or mounted on dual purpose Trucks, on Job Site or in conjunction with jobsite, in Loading and Unloading of Concrete, Cement, Fly Ash, Instantcrete, or Similar Type Materials); Compressors (2 or 3 in Battery); Concrete Finishing Machines; Concrete cleaning decontamination machine operator; Concrete Saws and Cutters (Ride-on type); Concrete Spreaders (Hetzl, Rexomatic and Similar Types); Concrete Vibrators; Conveyors (under 125 feet); Crushing Machines; Directional Boring Machines; Ditching Machine-small (Ditch-witch, Vermeer, or Similar type); Dope Pots (Mechanical with or without pump); Dumpsters; Elevator; Fireman; Fork Lifts (Economobile, Lull and Similar Types of Equipment); Front End Loaders (1 yd. and over but under 2 yds.); Generators (2 or 3 in Battery); Giraffe Grinders; Grout Pump; Gunnite Machines (excluding nozzle); Hammer Vibrator (in conjunction with Generator); Heavy Equipment Robotics Operator Technician; Hoists-Roof, Tugger, Aerial Platform Hoist & House Cars; Hoppers; Hopper Doors (power operated); Hydro Blaster; Hydraulic Jacking Trailer; Ladders (motorized); Laddervator; Locomotive-dinky type; Maintenance -Utility Man; Master Environmental Maintenance Technician; Mechanics; Mixers (Excepting Paving Mixers); Motor Patrols; Pavement Breakers (small self - propelled ride on type-also maintains compressor hydraulic unit); Pavement Breaker-truck mounted; Pipe Bending Machine (Power); Pitch Pump; Plaster Pump (regardless of size); Post Hole Digger (Post Pounder & Auger); Pot Hole Killer Trucks or equivalent; Rod Bending Machines (Power); Roller-Black Top; Scales (Power); Seaman pulverizing mixer; Shoulder widener; Silos; Skidsteer (all attachments); Skimmer Machines (boom-type); Steel Cutting Machine (service & maintain); Tam Rock Drill; Tractors; Transfer Machine; Captain (Power Boats); Tug Master (powerboats); Ultra High Pressure Waterjet Cutting Tool System operator/maintenance technician; Vacuum Blasting Machine; Vibrating Plants (used in conjunction with unloading); Welder and Repair Mechanics

CLASS D: Brooms and Sweepers; Chippers; Compressor (single); Concrete Spreaders (small type); Conveyor Loaders (not including Elevator Graders); Engines-large diesel (1620 HP) and Staging Pump; Farm Tractors; Fertilizing Equipment (Operation & Maintenance of); Fine Grade Machine (small type); Form Line Graders (small type); Front End Loader (under 1 yard); Generator (single); Grease, Gas, Fuel and Oil supply trucks; Heaters (Nelson or other type incl. Propane, Natural Gas or Flowtype Units); Lights, Portable Generating Light Plants; Mixers (Concrete, small); Mulching Equipment (Operation and Maintenance of); Pumps (2 or less than 4 inch suction); Pumps (4 inch suction and over incl. submersible pumps); Pumps (Diesel Engine and Hydraulic-immaterial of power); Road Finishing Machines (small type); Rollers-grade, fill or stone base; Seeding Equip. (Operation and Maintenance of); Sprinkler & Water Pump Trucks (used on jobsite or in conjunction with jobsite); Steam Jennies and Boilers-irrespective of use; Stone Spreader; Tamping Machines, Vibrating Ride-on; Temporary Heating Plant (Nelson or other type, incl. Propane, Natural Gas or Flow Type Units); Water & Sprinkler Trucks (used on or in conjunction with jobsite); Welding Machines (Gas, Diesel, and/or Electric Converters of any type, single, two, or three in a battery); Wellpoint Systems (including installation by Bull Gang and Maintenance of)

CLASS E: Assistant Engineer/Oiler; Drillers Helper; Maintenance Apprentice (Deck Hand); Maintenance Apprentice (Oiler); Mechanics' Helper; Tire Repair and Maintenance; Transit/Instrument Man

WAGES:(per hour)

	07/01/2023	07/01/2024 Additional	07/01/2025 Additional
Class A5	\$ 65.72 plus 4.00*	\$ 2.75***	\$ 2.50***
Class A4	64.72 plus 4.00*	2.75***	2.50***
Class A3	63.72 plus 4.00*	2.75***	2.50***
Class A2	61.22 plus 4.00*	2.75***	2.50***
Class A1	60.22 plus 4.00*	2.75***	2.50***
Class A	59.22 plus 4.00*	2.75***	2.50***
Class B	57.63 plus 4.00*	2.75***	2.50***
Class C	55.72 plus 4.00*	2.75***	2.50***
Class D	54.09 plus 4.00*	2.75***	2.50***
Class E	50.38 plus 4.00*	2.75***	2.50***
Safety Engineer	59.96 plus 4.00*	2.75***	2.50***
Helicopter:			
Pilot/Engineer	61.04 plus 4.00*	2.75***	2.50***
Co Pilot	59.22 plus 4.00*	2.75***	2.50***
Communications Engineer	59.22 plus 4.00*	2.75***	2.50***
Surveying:			
Chief of Party	59.22 plus 4.00*	2.75***	2.50***
Transit/Instrument Man	50.38 plus 4.00*	2.75***	2.50***
Rod/Chainman	49.80 plus 4.00*	2.75***	2.50***

Additional \$0.75 for Survey work Tunnel under compressed air.

Additional \$0.50 for Hydrographic work.

\*The \$4.00 is added to the Class Base Wage for all hours worked. Additionally, the \$4.00 is subject to the V-Code listed on the OVERTIME CODE Sheet.

\*\*Outside Material Hoist (Class B) receives additional \$ 1.00 per hour on 110 feet up to 199 feet total height, \$ 2.00 per hour on 200 feet and over total height.

\*\*\*To be allocated at a later date

- SHIFT WORK: On all Government mandated irregular or off shift work, an additional 15% on straight time hours.

- On HAZARDOUS WASTE REMOVAL or ASBESTOS REMOVAL work, or any state or federally DESIGNATED HAZARDOUS WASTE SITE:

For projects bid on or before April 1, 2020...Where the Operating Engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin and eye protection, the Operating Engineer shall receive the hourly wage plus an additional twenty percent (20%) of that wage for the entire shift.

For projects bid after April 1, 2020...On hazardous waste removal work of any kind, including state or federally designated site where the operating engineer is required to wear level A, B, or C personal protection the operating engineer shall receive an hourly wage rate of his regular hourly wage plus \$5.00 per hour. An operating engineer working at a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A, B, or C personal protection, shall receive an hourly wage rate of his regular rate plus \$ 1.00 per hour. This shall also apply to sites where the level D personal protection is required.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman \$ 33.50

SHIFT WORK: On all Government mandated irregular or off shift work, an additional 15% on straight time hours.

**OVERTIME PAY**

See (B, E, Q, \*V, X) on OVERTIME PAGE

\*15% premium is also required on shift work benefits

**HOLIDAY**

Paid: See (5, 6, 10, 13, 15) on HOLIDAY PAGE

Overtime: See (5, 6, 10, 13, 15) on HOLIDAY PAGE

Holidays falling on Sunday will be celebrated on Monday.

**REGISTERED APPRENTICES**

(1) year terms at the following percentage of journeyman's wage:

1st year	60% of Class base wage plus \$4.00*
2nd year	70% of Class base wage plus \$4.00*
3rd year	80% of Class base wage plus \$4.00*
4th year	90% of Class base wage plus \$4.00*

\*The \$4.00 is added to the Class Base Wage for all hours worked. Additionally, the \$4.00 is subject to the V-Code listed on the OVERTIME CODE Sheet.

Supplemental Benefits per hour:

Apprentices \$ 33.50

11-825

**Operating Engineer - Marine Dredging**

**04/01/2024**

**JOB DESCRIPTION** Operating Engineer - Marine Dredging

**DISTRICT 4**

**ENTIRE COUNTIES**

Albany, Bronx, Cayuga, Clinton, Columbia, Dutchess, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Orange, 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:	07/01/2023	10/01/2023
CLASS A1	\$ 43.94	\$ 45.26
Deck Captain, Leverman		
Mechanical Dredge Operator		
Licensed Tug Operator 1000HP or more.		

CLASS A2 Crane Operator (360 swing)	39.16	40.33
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	38.00	39.14
CLASS B2 Certified Welder	35.77	36.84
CLASS C1 Drag Barge Operator, Steward, Mate, Assistant Fill Placer	34.79	35.83
CLASS C2 Boat Operator	33.67	34.68
CLASS D Shoreman, Deckhand, Oiler, Rodman, Scowman, Cook, Messman, Porter/Janitor	27.97	28.81

**SUPPLEMENTAL BENEFITS**

Per Hour:

THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

All Classes A & B	\$ 11.85 plus 6% of straight time wage, Overtime hours add \$ 0.63	\$ 12.00 plus 6% of straight time wage, Overtime hours add \$ 0.63
All Class C	\$ 11.60 plus 6% of straight time wage, Overtime hours add \$ 0.50	\$ 11.75 plus 6% of straight time wage, Overtime hours add \$ 0.50
All Class D	\$ 11.35 plus 6% of straight time wage, Overtime hours add \$ 0.38	\$ 11.60 plus 6% of straight time wage, Overtime hours add \$ 0.50

**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 - Steel Erectors**

**04/01/2024**

**JOB DESCRIPTION** Operating Engineer - Steel Erectors

**DISTRICT** 11

**ENTIRE COUNTIES**

Delaware, Orange, Rockland, Sullivan, Ulster

**WAGES**

CLASS A3: Cranes, Derricks and Pile Drivers 100 tons or more and Tower Cranes, with a 140 ft. boom and over.

CLASS A2: Cranes, Derricks and Pile Drivers 100 tons or more and Tower Cranes, with up to a 139 ft. boom and under.

CLASS A1: Cranes, Derricks and Pile Drivers less than 100 tons with a 140 ft. boom and over.

CLASS A: Cranes, Derricks and Pile Drivers less than 100 tons with up to a 139 ft. boom and under.

CLASS B: "A" Frame; Cherry Pickers(10 tons and under); Hoists (all type Hoists, shall also include Steam, Gas, Diesel, Electric, Air Hydraulic, Single and Double Drum, Concrete, Brick Shaft Caisson, Snorkel Roof, and/or any other Similar Type Hoisting Machines, portable or stationary, except Chicago Boom Type); Jacks-Screw Air Hydraulic Power Operated Unit or Console Type (not hand Jack or Pile Load Test Type); Side Booms; Straddle Carrier

CLASS C: Aerial Platform used as Hoist; Compressors (2 or 3 in Battery); Concrete cleaning/ decontamination machine operator; Directional Boring Machines; Elevator or House Cars; Conveyers and Tugger Hoists; Fireman; Fork Lifts; Generators (2 or 3 in Battery); Heavy Equipment Robotics Operator/Technician; Master Environmental Maintenance Technician; Maintenance -Utility Man; Rod Bending Machines (Power); Captain(powerboat); Tug Master; Ultra High Pressure Waterjet Cutting Tool System; Vacuum Blasting Machine; Welding Machines(gas or electric,2 or 3 in battery, including diesels); Transfer Machine; Apprentice Engineer/Oiler with either one compressor or one welding machine when used for decontamination and remediation

CLASS D: Compressor (single); Welding Machines (Gas, Diesel, and/or Electric Converters of any type); Welding System Multiple (Rectifier Transformer type)

CLASS E: Assistant Engineer/Oiler; Maintenance Apprentice (Deck Hand);Drillers Helper; Maintenance Apprentice (Oiler); Mechanics' Helper; Transit/Instrument Man

WAGES:(per hour)

	07/01/2023	07/01/2024 Additional	07/01/2025 Additional
Class A3	\$ 67.74 plus 4.00*	\$ 2.75**	\$ 2.50**
Class A2	66.08 plus 4.00*	2.75**	2.50**
Class A1	63.24 plus 4.00*	2.75**	2.50**
Class A	61.58 plus 4.00*	2.75**	2.50**
Class B	58.79 plus 4.00*	2.75**	2.50**
Class C	56.13 plus 4.00*	2.75**	2.50**
Class D	54.60 plus 4.00*	2.75**	2.50**
Class E	50.84 plus 4.00*	2.75**	2.50**
Vacuum Truck	59.55 plus 4.00*	2.75**	2.50**
Safety Engineer	60.41 plus 4.00*	2.75**	2.50**
Helicopter:			
Pilot/Engineer	63.24 plus 4.00*	2.75**	2.50**
Co Pilot	62.85 plus 4.00*	2.75**	2.50**
Communications Engineer	62.85 plus 4.00*	2.75**	2.50**
Surveying:			
Chief of Party	59.55 plus 4.00*	2.75**	2.50**
Transit/Instrument man	50.84 plus 4.00*	2.75**	2.50**
Rod/Chainman	49.80 plus 4.00*	2.75**	2.50**
Additional \$0.75 for Survey work Tunnels under compressed air.			
Additional \$0.50 for Hydrographic work.			

\*The \$4.00 is added to the Class Base Wage for all hours worked. Additionally, the \$4.00 is subject to the V-Code listed on the OVERTIME CODE Sheet.

\*\*To be allocated at a later date

- SHIFT WORK: On all Government mandated irregular or off shift work, an additional 15% on straight time hours.
- On HAZARDOUS WASTE REMOVAL or ASBESTOS REMOVAL work, or any state or federally DESIGNATED HAZARDOUS WASTE SITE:

For projects bid on or before April 1, 2020...Where the Operating Engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin and eye protection, the Operating Engineer shall receive the hourly wage plus an additional twenty percent (20%) of that wage for the entire shift.

For projects bid after April 1, 2020...On hazardous waste removal work of any kind, including state or federally designated site where the operating engineer is required to wear level A, B, or C personal protection the operating engineer shall receive an hourly wage rate of his regular hourly wage plus \$5.00 per hour. An operating engineer working at a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A, B, or C personal protection, shall receive an hourly wage rate of his regular rate plus \$ 1.00 per hour. This shall also apply to sites where the level D personal protection is required.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman \$ 33.50

**OVERTIME PAY**

See (B, E, Q, \*V, X) on OVERTIME PAGE

\*15% premium is also required on shift work benefits

**HOLIDAY**

Paid: See (5, 6, 10, 13, 15) on HOLIDAY PAGE

Overtime: See (5, 6, 10, 13, 15) on HOLIDAY PAGE

Holidays falling on Sunday will be celebrated on Monday.

**REGISTERED APPRENTICES**

(1) year terms at the following percentage of journeyman's wage.

1st year	60% of Class base wage plus \$4.00*
2nd year	70% of Class base wage plus \$4.00*
3rd year	80% of Class base wage plus \$4.00*
4th year	90% of Class base wage plus \$4.00*

\*The \$4.00 is added to the Class Base Wage for all hours worked. Additionally, the \$4.00 is subject to the V-Code listed on the OVERTIME CODE Sheet.

Supplemental Benefits per hour:

Apprentices \$ 33.50

11-825SE

**Painter** **04/01/2024**

**JOB DESCRIPTION** Painter

**DISTRICT 1**

**ENTIRE COUNTIES**

Columbia, Dutchess, Greene, Orange, Sullivan, Ulster

**WAGES**

Per hour	07/01/2023	07/01/2024 Additional
Brush/Paper Hanger	\$ 37.97	+ \$1.93*
Dry Wall Finisher	37.97	+ \$1.93*
Lead Abatement	37.97	+ \$1.93*
Sandblaster-Painter	37.97	+ \$1.93*
Spray Rate	38.97	+ \$1.93*

(\* ) To be allocated at later date.

See Bridge Painting rates for the following work:

Structural Steel, all work performed on tanks, ALL BRIDGES, towers, smoke stacks, flag poles. Rate shall apply to all of said areas from the ground up.

**SUPPLEMENTAL BENEFITS**

Per hour

Journeyperson \$ 26.28

**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

Six (6) month terms at the following percentage of Journeyperson's wage

1st	2nd	3rd	4th	5th	6th
50%	55%	65%	75%	85%	95%

Supplemental Benefits per hour worked

1st term	\$ 11.14
All others	26.28

1-155

**Painter - Bridge & Structural Steel**

**04/01/2024**

**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:	07/01/2023	10/01/2023
	\$ 54.50	\$ 56.00
	+ 10.10*	+ 10.35*

ADDITIONAL \$6.50 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.

**SHIFT WORK:**

When directly specified in public agency or authority contract documents for an employer to work a second shift and works the second shift with employees other than from the first shift, all employees who work the second shift will be paid 10% of the base wage shift differential in lieu of overtime for the first eight (8) hours worked after which the employees shall be paid at time and one half of the regular wage rate. When a single irregular work shift is mandated in the job specifications or by the contracting agency, wages shall be paid at time and one half for single shifts between the hours of 3pm-11pm or 11pm-7am.

**SUPPLEMENTAL BENEFITS**

Per Hour:

Journeyworker:	\$ 11.78	\$ 12.43
	+ 30.85*	+ 31.55*

\* 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 (B, 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.

1st year	\$ 21.80	\$ 22.40
	+ 4.04	+ 4.14

2nd year	\$ 32.70 + 6.06	\$ 33.60 + 6.21
3rd year	\$ 43.60 + 8.08	\$ 44.80 + 8.28
Supplemental Benefits - Per hour:		
1st year	\$ .90 + 12.34	\$ 1.16 + 12.62
2nd year	\$ 7.07 + 18.51	\$ 7.46 + 18.93
3rd year	\$ 9.42 + 24.68	\$ 9.94 + 25.24

NOTE: All premium wages are to be calculated on base rate per hour only.

8-DC-9/806/155-BrSS

**Painter - Line Striping** **04/01/2024**

**JOB DESCRIPTION** Painter - Line Striping

**DISTRICT 8**

**ENTIRE COUNTIES**

Albany, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Nassau, Orange, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

**WAGES**

Per hour:

Painter (Striping-Highway):	07/01/2023	01/01/2024	07/01/2024
Striping-Machine Operator*	\$ 31.53	\$ 31.53	\$ 34.12
Linerman Thermoplastic	38.34	38.34	41.12

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.

NOTE - The "Employer Registration" (30.1) use of a '4 Day/10 Hour Work schedules' will no longer be accepted or processed. All registered projects prior to June 30,2023 will expire within the granted time frame.

For Pre-Registered Projects 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. Tuesday thru Friday may be worked with no make-up day. For further clarification contact your local Bureau Office.

**SUPPLEMENTAL BENEFITS**

Per hour paid:

Journeyworker:

Striping Machine Operator:	\$ 10.03	\$ 22.24	\$ 23.65
Linerman Thermoplastic:	10.03	22.24	23.65

**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:

1st Term:	\$ 15.00	\$ 15.00	\$ 15.00
2nd Term:	18.92	18.92	20.47
3rd Term:	25.22	25.22	27.30

Supplemental Benefits per hour:

1st term:	\$ 9.16	\$ 22.24	\$ 23.65
2nd Term:	10.03	22.24	23.65

3rd Term:	10.03	22.24	23.65	8-1456-LS
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**Painter - Metal Polisher** **04/01/2024**

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**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**

	07/01/2023
Metal Polisher	\$ 38.18
Metal Polisher*	39.28
Metal Polisher**	42.18

\*Note: Applies on New Construction & complete renovation

\*\* Note: Applies when working on scaffolds over 34 feet.

**SUPPLEMENTAL BENEFITS**

Per Hour: 07/01/2023

Journeyworker:  
All classification \$ 12.34

**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, 11, 15, 16, 25, 26) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

Wages per hour:

One (1) year term at the following wage rates:

	07/01/2023
1st year	\$ 16.00
2nd year	17.00
3rd year	18.00
1st year*	\$ 16.39
2nd year*	17.44
3rd year*	18.54
1st year**	\$ 18.50
2nd year**	19.50
3rd year**	20.50

\*Note: Applies on New Construction & complete renovation

\*\* Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:

Per hour:

1st year	\$ 8.69
2nd year	8.69
3rd year	8.69

8-8A/28A-MP

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**Plumber** **04/01/2024**

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**JOB DESCRIPTION** Plumber **DISTRICT 11**

**ENTIRE COUNTIES**

Orange, Rockland, Sullivan

**PARTIAL COUNTIES**

Ulster: Only the Townships of Plattekill, Marlboro, Wawarsing, and Shawangunk (except for Wallkill and Shawangunk Prisons).

**WAGES**

REFRIGERATION: For commercial and industrial refrigeration which means service, maintenance, and installation work where the combined compressor tonnage does not exceed 40 tons.

AIR CONDITIONING: Air conditioning to be installed that is water cooled shall not exceed 25 tons. This will include the piping of the component system and erection of water tower. Air conditioning that is air cooled shall not exceed 50 tons.

WAGES: (per hour)	07/01/2023	05/01/2024	05/01/2025
		Additional	Additional
Plumber	\$ 38.59	\$ 2.25*	\$ 2.50*

\*To be allocated at a later date

Star Certification: an additional \$ 1.00 per hour over scale will be paid to all those who have Star Certification.

Shift Differential: When mandated by the governmental agency, an additional 15% premium will be paid for irregular work day or for 2nd and 3rd shift.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman	\$ 36.07*
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\*For overtime or shift differential work, \$0.10 is paid at straight time, the remaining balance is paid at the same premium as the wages.

**OVERTIME PAY**

See (B, G, P, \*V) on OVERTIME PAGE

\* A portion of the benefit amount is subject to the V code for overtime and shift differential work.

**HOLIDAY**

Paid: See (5, 6, 13, 15, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 13, 15, 25) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

(1)year terms at the following wage.

	07/01/2023
1st term	\$ 17.37
2nd term	21.23
3rd term	25.09
4th term	28.95
5th term	32.81

Supplemental Benefits per hour:

Apprentices

1st term	\$ 16.31*
2nd term	19.90*
3rd term	23.50*
4th term	27.10*
5th term	30.69*

\*For overtime or shift differential work, \$0.10 is paid at straight time, the remaining balance is paid at the same premium as the wages.  
 11-373 Refrig

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**Plumber** **04/01/2024**

**JOB DESCRIPTION** Plumber

**DISTRICT** 11

**ENTIRE COUNTIES**

Orange, Rockland, Sullivan

**PARTIAL COUNTIES**

Ulster: Only the Townships of Plattekill, Marlboro, Wawarsing, and Shawangunk (except for Wallkill and Shawangunk Prisons).

**WAGES**

WAGES:(per hour)	07/01/2023	05/01/2024
		Additional
Plumber/Steamfitter	\$ 49.95	\$ 2.25*

\*to be allocated at a later date

Note: For all work 40-60 feet above ground add \$ 0.25 per hour, over 60 feet add \$ 0.50 per hour.

Shift Differential: When mandated by the governmental agency, an additional 15% premium will be paid for irregular work day or for 2nd and 3rd shift.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman \$ 44.57

\*For overtime or shift differential work, \$0.10 is paid at straight time, the remaining balance is paid at the same premium as the wages.

**OVERTIME PAY**

See (B, E, Q, \*V) on OVERTIME PAGE

\* A portion of the benefit amount is subject to the V code for overtime and shift differential work.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE

When a holiday falls on a Saturday, the day prior shall be considered and recognized as the holiday. When a holiday falls on a Sunday, the day proceeding shall be considered and recognized as the holiday to be observed.

**REGISTERED APPRENTICES**

( 1 ) year terms at the following wages.

	07/01/2023
1st term	\$ 17.49
2nd term	22.48
3rd term	27.48
4th term	32.47
5th term	39.96

Supplemental Benefits per hour:

1st term	\$ 15.69*
2nd term	20.14*
3rd term	24.57*
4th term	29.03*
5th term	35.67*

\*For overtime or shift differential work, \$0.10 is paid at straight time, the remaining balance is paid at the same premium as the wages.

11-373 SF

**Plumber**

**04/01/2024**

**JOB DESCRIPTION** Plumber

**DISTRICT 8**

**ENTIRE COUNTIES**

Dutchess

**PARTIAL COUNTIES**

Delaware: Only the Townships of Middletown and Roxbury.

Ulster: Entire county (including Walkkill and Shawangunk Prisons in Town of Shawangunk) EXCEPT for remainder of Town of Shawangunk, and Towns of Plattekill, Marlboro, and Wawarsing.

**WAGES**

Per hour:	07/01/2023
Plumber & Steamfitter	\$ 57.08

**SHIFT WORK:**

When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyworker: \$ 42.38

**OVERTIME PAY**

See (B, E, E2, Q, V) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

(1)year terms at the following rates:

07/01/2023

1st year	\$ 21.80
2nd year	30.11
3rd year	34.93
4th year	41.89
5th year	48.24

Supplemental Benefits per hour:

1st year	\$ 17.95
2nd year	22.96
3rd year	26.66
4th year	30.82
5th year	33.99

8-21.2-SF

**Plumber - HVAC / Service**

**04/01/2024**

**JOB DESCRIPTION** Plumber - HVAC / Service

**DISTRICT 8**

**ENTIRE COUNTIES**

Dutchess, Putnam, Westchester

**PARTIAL COUNTIES**

Delaware: Only the townships of Middletown and Roxbury

Ulster: Entire County(including Walkkill and Shawangunk Prisons) except for remainder of Town of Shawangunk and Towns of Plattekill, Marlboro, and Wawarsing.

**WAGES**

Per hour: 07/01/2023

HVAC Service \$ 42.68  
 + \$ 4.37\*

\*Note: This portion of wage is not subject to overtime premium.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyworker HVAC Service  
 \$ 28.99

**OVERTIME PAY**

See (B, F, R) on OVERTIME PAGE

**HOLIDAY**

Paid: See (5, 6, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

HVAC SERVICE

(1)year terms at the following wages:

1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.
\$ 19.32	\$ 22.91	\$ 28.56	\$ 35.13	\$ 38.15
+\$2.39*	+\$2.70*	+\$3.25*	+\$3.88*	+\$4.12*

\*Note: This portion of wage is not subject to overtime premium.

Supplemental Benefits per hour:

Apprentices 07/01/2023

1st term	\$ 20.84
2nd term	22.28
3rd term	23.85
4th term	26.01
5th term	27.55

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**Plumber - Jobbing & Alterations** **04/01/2024**

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**JOB DESCRIPTION** Plumber - Jobbing & Alterations

**DISTRICT** 8

**ENTIRE COUNTIES**  
Dutchess, Putnam, Westchester

**PARTIAL COUNTIES**  
Ulster: Entire county (including Wallkill and Shawangunk Prisons in Town of Shawangunk) EXCEPT for remainder of Town of Shawangunk, and Towns of Plattekill, Marlboro, and Wawarsing.

**WAGES**  
Per hour: 07/01/2023  
Journeyworker: \$ 48.51

Repairs, replacements and alteration work is any repair or replacement of a present plumbing system that does not change existing roughing or water supply lines.

**SHIFT WORK:**  
When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

**SUPPLEMENTAL BENEFITS**  
Per hour:  
Journeyworker \$ 34.76

**OVERTIME PAY**  
See (B, \*E, E2, Q, V) on OVERTIME PAGE  
\*When used as a make-up day, hours after 8 on Saturday shall be paid at time and one half.

**HOLIDAY**  
Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

**REGISTERED APPRENTICES**  
(1) year terms at the following wages:

1st year	\$ 20.92
2nd year	23.24
3rd year	25.29
4th year	35.48
5th year	37.49

Supplemental Benefits per hour:

1st year	\$ 11.45
2nd year	13.46
3rd year	17.51
4th year	23.67
5th year	25.68

8-21.3-J&A

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**Roofer** **04/01/2024**

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**JOB DESCRIPTION** Roofer

**DISTRICT** 9

**ENTIRE COUNTIES**  
Bronx, Dutchess, Kings, New York, Orange, Putnam, Queens, Richmond, Rockland, Sullivan, Ulster, Westchester

**WAGES**  
Per Hour: 07/01/2023 05/01/2024  
Roofer/Waterproofers \$ 46.50 Additional \$2.50  
+ \$7.00\*

\* This portion is not subjected to overtime premiums.

Note: Abatement/Removal of Asbestos containing roofs and roofing material is classified as Roofer.

**SUPPLEMENTAL BENEFITS**

Per Hour: \$ 31.37

**OVERTIME PAY**

See (B, H) on OVERTIME PAGE

Note: An observed holiday that falls on a Sunday will be observed the following Monday.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE  
 Overtime: See (5, 6) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

( 1 ) year term apprentices indentured prior to 01/01/2023

1st	2nd	3rd	4th
\$ 16.28	\$ 23.25	\$ 27.90	\$ 34.88
	+ 3.50*	+ 4.20*	+ 5.26*

Supplements:

1st	2nd	3rd	4th
\$ 4.03	\$ 15.85	\$ 18.95	\$ 23.61

\* This portion is not subjected to overtime premiums.

(1) year term apprentices indentured after 01/01/2023

1st	2nd	3rd	4th	5th
\$ 17.67	\$ 20.93	\$ 23.25	\$ 27.90	\$ 34.88
	+ 3.16*	+ 3.50*	+ 4.20*	+ 5.26

Supplements:

1st	2nd	3rd	4th	5th
\$ 7.61	\$ 14.29	\$ 15.85	\$ 18.95	\$ 23.61

\* This portion is not subjected to overtime premiums.

9-8R

**Sheetmetal Worker**

**04/01/2024**

**JOB DESCRIPTION** Sheetmetal Worker

**DISTRICT 8**

**ENTIRE COUNTIES**

Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

**WAGES**

SheetMetal Worker 07/01/2023  
 \$ 47.00  
 + 3.60\*

\*This portion is not subject to overtime premiums.

**SHIFT WORK**

For all NYS D.O.T. and other Governmental mandated off-shift work:  
 10% increase for additional shifts for a minimum of five (5) days

**SUPPLEMENTAL BENEFITS**

Journeyworker \$ 45.62

**OVERTIME PAY**

OVERTIME:.. See ( B, E, Q, ) on OVERTIME PAGE.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE  
 Overtime: See (5, 6, 8, 15, 16, 23) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

1st	2nd	3rd	4th	5th	6th	7th	8th
\$ 17.50	\$ 19.67	\$ 21.87	\$ 24.05	\$ 26.24	\$ 28.44	\$ 31.10	\$ 33.75
+ 1.44*	+ 1.62*	+ 1.80*	+ 1.98*	+ 2.16*	+ 2.34*	+ 2.52*	+ 2.70*

\*This portion is not subject to overtime premiums.

Supplemental Benefits per hour:

Apprentices

1st term	\$ 19.53
2nd term	21.99
3rd term	24.42



4th term	26.88
5th term	29.32
6th term	31.75
7th term	33.72
8th term	35.71

8-38

**Sprinkler Fitter** **04/01/2024**

**JOB DESCRIPTION** Sprinkler Fitter **DISTRICT 1**

**ENTIRE COUNTIES**  
 Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

**WAGES**  
 Per hour 07/01/2023

Sprinkler Fitter \$ 50.86

**SUPPLEMENTAL BENEFITS**  
 Per hour  
 Journeyperson \$ 30.19

**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

One Half Year terms at the following wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 24.77	\$ 27.53	\$ 30.03	\$ 32.78	\$ 35.53	\$ 38.29	\$ 41.04	\$ 43.79	\$ 46.54	\$ 49.30

Supplemental Benefits per hour

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 8.74	\$ 8.74	\$ 20.32	\$ 20.32	\$ 20.57	\$ 20.57	\$ 20.57	\$ 20.57	\$ 20.57	\$ 20.57
									1-669.2

**Teamster - Building / Heavy&Highway** **04/01/2024**

**JOB DESCRIPTION** Teamster - Building / Heavy&Highway **DISTRICT 11**

**ENTIRE COUNTIES**  
 Dutchess, Orange, Rockland, Sullivan, Ulster

**WAGES**  
 GROUP 1: LeTourneau Tractors, Double Barrel Euclids, Athney Wagons and similar equipment (except when hooked to scrapers), I-Beam and Pole Trailers, Tire Trucks, Tractor and Trailers with 5 axles and over, Articulated Back Dumps and Road Oil Distributors, Articulated Water Trucks and Fuel Trucks/Trailers, positions requiring a HAZMAT CDL endorsement.

GROUP 1A: Drivers on detachable Gooseneck Low Bed Trailers rated over 35 tons.

GROUP 2: All equipment 25 yards and up to and including 30 yard bodies and cable Dump Trailers and Powder and Dynamite Trucks.

GROUP 3: All Equipment up to and including 24-yard bodies, Mixer Trucks, Dump Crete Trucks and similar types of equipment, Fuel Trucks, Batch Trucks and all other Tractor Trailers, Hi-Rail Truck.

GROUP 4: Tri-Axles, Ten Wheelers, Grease Trucks, Tillerman, Pattern Trucks, Attenuator Trucks, Water Trucks, Bus.

GROUP 5: Straight Trucks.

GROUP 6: Pick-up Trucks for hauling materials and parts, and Escort Man over-the-road.

WAGES: (per hour) 07/01/2023

GROUP 1	\$ 34.58
GROUP 1A	35.72
GROUP 2	34.02
GROUP 3	33.80
GROUP 4	33.69
GROUP 5	33.57
GROUP 6	33.57

**NOTE ADDITIONAL PREMIUMS:**

- On projects requiring an irregular shift a premium of 10% will be paid on wages. The premium will be paid for off-shift or irregular shift work when mandated by Governmental Agency.
- Employees engaged in hazardous/toxic waste removal, on a State or Federally designated hazardous/toxic waste site, where the employee comes in contact with hazardous/toxic waste material and when personal protective equipment is required for respiratory, skin, or eye protection, the employee shall receive an additional 20% premium above the hourly wage.

NOTE - The 'Employer Registration' (30.1) use of a '4 Day/10 Hour Work schedules' will no longer be accepted or processed. All registered projects prior to June 30,2023 will expire within the granted time frame.

For Pre-Registered Projects 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. Tuesday thru Friday may be worked with no make-up day. For further clarification contact your local Bureau Office.

**SUPPLEMENTAL BENEFITS**

Per hour:

First 40 hours	\$ 44.59
Over 40 hours	36.99

**OVERTIME PAY**

See (\*B, E, \*\*E2, \*\*\*P, X) on OVERTIME PAGE

\*Holidays worked Monday through Friday receive Double Time (2x) after 8 hours.

\*\*Makeup day limited to the employees who were working on the site that week.

\*\*\*Sunday Holidays are paid at a rate of double time and one half (2.5x) for all hours worked.

**HOLIDAY**

Paid: See (5, 6, 15, 25) on HOLIDAY PAGE

Overtime: See (\*1) on HOLIDAY PAGE

- Any employee working two (2) days in any calendar week during which a holiday occurs shall receive a days pay for each holiday occurring during said week. This provision shall also apply if a holiday falls on a Saturday or Sunday.

\*See OVERTIME PAY section for when additional premium is applicable on Holiday hours worked.

11-445B/HH

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**Teamster - Delivery - Building / Heavy&Highway**

**04/01/2024**

**JOB DESCRIPTION** Teamster - Delivery - Building / Heavy&Highway

**DISTRICT** 11

**ENTIRE COUNTIES**

Dutchess, Orange, Rockland, Sullivan, Ulster

**WAGES**

Group 1	Tractor Trailer Drivers
Group 2	Tri- Axle

Wages: 07/01/2023

Group 1	\$ 33.70
Group 2	29.70

Hazardous/Toxic Waste Removal additional 20% when personal protective equipment is required.

**SUPPLEMENTAL BENEFITS**

Per hour paid:

First 40 hours	\$ 32.30
Over 40 hours	0.00

**OVERTIME PAY**

See (B, E, Q, X) on OVERTIME PAGE

**HOLIDAY**

Paid: See (5, 13, 15, 16, 20, 22, 25, 26) on HOLIDAY PAGE

Overtime: See (5, 13, 15, 16, 20, 22, 25, 26) on HOLIDAY PAGE

- Employee must work either the scheduled day of work before or the scheduled day of work after the holiday in the workweek.

- Any employee working one (1) day in the calendar week during which a holiday occurs shall receive a day's pay for each holiday occurring during said week. This provision shall also apply if a holiday falls on a Saturday.
- When any of the recognized holidays occur on Sunday and are celebrated any day before or after the holiday Sunday, such days shall be considered as the holiday and paid for as such.

11-445 B/HH Delivery

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**Welder**

**04/01/2024**

**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 07/01/2023

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

( 29 )      Juneteenth

**New York State Department of Labor - Bureau of Public Work  
State Office Building Campus  
Building 12 - Room 130  
Albany, New York 12226**

**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).

- |   |  |
|---|--|
| <input type="checkbox"/> 01 DOT                                   | <input type="checkbox"/> 07 City   |
| <input type="checkbox"/> 02 OGS                                   | <input type="checkbox"/> 08 Local School District  |
| <input type="checkbox"/> 03 Dormitory Authority                   | <input type="checkbox"/> 09 Special Local District, i.e.,<br>Fire, Sewer, Water District |
| <input type="checkbox"/> 04 State University<br>Construction Fund | <input type="checkbox"/> 10 Village  |
| <input type="checkbox"/> 05 Mental Hygiene<br>Facilities Corp.    | <input type="checkbox"/> 11 Town   |
| <input type="checkbox"/> 06 OTHER N.Y. STATE UNIT                 | <input type="checkbox"/> 12 County   |
|   | <input type="checkbox"/> 13 Other Non-N.Y. State<br>(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 :

- |  |   |
|--|---|
| <input type="checkbox"/> Construction (Building, Heavy<br>Highway/Sewer/Water) | <input type="checkbox"/> Fuel Delivery                                      |
| <input type="checkbox"/> Tunnel  | <input type="checkbox"/> Guards, Watchmen                                   |
| <input type="checkbox"/> Residential   | <input type="checkbox"/> Janitors, Porters, Cleaners,<br>Elevator Operators |
| <input type="checkbox"/> Landscape Maintenance                                 | <input type="checkbox"/> Moving furniture and<br>equipment                  |
| <input type="checkbox"/> Elevator maintenance                                  | <input type="checkbox"/> Trash and refuse removal                           |
| <input type="checkbox"/> Exterminators, Fumigators                             | <input type="checkbox"/> Window cleaners                                    |
| <input type="checkbox"/> Fire Safety Director, NYC Only                        | <input type="checkbox"/> Other (Describe)                                   |

9. Does this project comply 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://apps.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 03/29/2024**

**Article 8**

AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	DOL	*****5754	0369 CONTRACTORS, LLC		515 WEST AVE UNIT PH 13NORWALK CT 06850	05/12/2021	05/12/2026
DOL	DOL	*****5784	A.J.M. TRUCKING, INC.		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	AG	*****1812	ADVANCED BUILDERS & LAND DEVELOPMENT, INC.		400 OSER AVE #2300HAUPPAUGE NY 11788	09/11/2019	09/11/2024
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		ALL COUNTY SEWER & DRAIN, INC.		7 GREENFIELD DR WARWICK NY 10990	03/25/2022	03/25/2027
DOL	NYC		AMJED PARVEZ		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL		ANGELO F COKER		2610 SOUTH SALINA STREET SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		ANGELO GARCIA		515 WEST AVE UNIT PH 13NORWALK CT 06850	05/12/2021	05/12/2026
DOL	DOL		ANGELO TONDO		449 WEST MOMBASHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	*****4231	ANKER'S ELECTRIC SERVICE, INC.		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL		ANTHONY MONGELLI		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	NYC		ARADCO CONSTRUCTION CORP		115-46 132RD ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	DOL		ARNOLD A. PAOLINI		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	NYC		ARSHAD MEHMOOD		168-42 88TH AVENUE JAMAICA NY 11432	11/20/2019	11/20/2024
DOL	NYC		AVM CONSTRUCTION CORP		117-72 123RD ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	NYC		AZIDABEGUM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	*****8421	B & B DRYWALL, INC		206 WARREN AVE APT 1WHITE PLAINS NY 10603	12/14/2021	12/14/2026
DOL	DOL		B&L RENOVATION CO.		618 OCEAN PARKWAY APT A6BROOKLYN NY 11230	09/17/2020	09/17/2025
DOL	DOL		BERNARD BEGLEY		38 LONG RIDGE ROAD BEDFORD NY 10506	12/18/2019	12/18/2024
DOL	NYC	*****2113	BHW CONTRACTING, INC.		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL	*****3627	BJB CONSTRUCTION CORP.		38 LONG RIDGE ROAD BEDFORD NY 10506	12/18/2019	12/18/2024
DOL	DOL	*****5078	BLACK RIVER TREE REMOVAL, LLC		29807 ANDREWS ROAD BLACK RIVER NY 13032	10/17/2023	10/17/2028
DOL	DOL	*****4512	BOB BRUNO EXCAVATING, INC		5 MORNINGSIDE DR AUBURN NY 13021	05/28/2019	05/28/2024
DOL	DOL		BRADLEY J SCHUKA		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	*****4083	C.P.D. ENTERPRISES, INC		P.O BOX 281 WALDEN NY 12586	03/03/2020	03/03/2025
DOL	DOL	*****5161	CALADRI DEVELOPMENT CORP.		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	DOL	*****3391	CALI ENTERPRISES, INC.		1223 PARK STREET PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	NYC		CALVIN WALTERS		465 EAST THIRD ST MT. VERNON NY 10550	09/09/2019	09/09/2024
DOL	DOL	*****4155	CASA BUILDERS, INC.	FRIEDLANDER CONSTRUCTION	64 N PUTT CONNERS ROAD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	AG	*****7247	CENTURY CONCRETE CORP		2375 RAYNOR ST RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****0026	CHANTICLEER CONSTRUCTION LLC		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	NYC	*****2117	CHARAN ELECTRICAL ENTERPRISES		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	NYC		CHARLES ZAHRADKA		863 WASHINGTON STREET FRANKLIN SQUARE NY 11010	03/10/2020	03/10/2025

**NYS DOL Bureau of Public Work Debarment List 03/29/2024**

**Article 8**

DOL	DOL		CHRISTOPHER GRECO		26 NORTH MYRTLE AVENUE SPRING VALLEY NY 10956	02/18/2021	02/18/2026
DOL	DOL		CHRISTOPHER PAPASTEFANOU A/K/A CHRIS PAPASTEFANOU		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL		CRAIG JOHANSEN		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL	*****3228	CROSS-COUNTY LANDSCAPING AND TREE SERVICE, INC.	ROCKLAND TREE SERVICE	26 NORTH MYRTLE AVENUE SPRING VALLEY NY 10956	02/18/2021	02/18/2026
DOL	DOL	*****7619	DANCO CONSTRUCTION UNLIMITED INC.		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL		DANIEL ROBERT MCNALLY		7 GREENFIELD DRIVE WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		DAVID FRIEDLANDER		64 NORTH PUTT CORNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	NYC		DAVID WEINER		14 NEW DROP LANE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	DOL		DELPHI PAINTING & DECORATING CO INC		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL		DINA TAYLOR		64 N PUTT CONNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL	*****5175	EAGLE MECHANICAL AND GENERAL CONSTRUCTION LLC		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	AG		EDWIN HUTZLER		23 NORTH HOWELLS RD BELLPORT NY 11713	08/04/2021	08/04/2026
DOL	DA		EDWIN HUTZLER		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	NYC	*****5917	EPOCH ELECTRICAL, INC		97-18 50TH AVE CORONA NY 11368	04/19/2018	04/19/2024
DOL	DOL		EUGENIUSZ "GINO" KUCHAR		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	DA		FREDERICK HUTZLER		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	NYC	*****6616	G & G MECHANICAL ENTERPRISES, LLC.		1936 HEMPSTEAD TURNPIKE EAST MEDOW NY 11554	11/29/2019	11/29/2024
DOL	DOL	*****2998	G.E.M. AMERICAN CONSTRUCTION CORP.		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	DOL		GABRIEL FRASSETTI			04/10/2019	04/10/2024
DOL	NYC		GAYATRI MANGRU		21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
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	DA		GIOVANNA TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DA	*****0213	GORILLA CONTRACTING GROUP, LLC		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DOL		HANS RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL		IRENE KASELIS		32 PENNINGTON AVE WALDWICK NJ 07463	05/30/2019	05/30/2024
DOL	DOL	*****9211	J. WASE CONSTRUCTION CORP.		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	DOL		J.M.J CONSTRUCTION		151 OSTRANDER AVENUE SYRACUSE NY 13205	11/21/2022	11/21/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027

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DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	12/12/2022	12/12/2027
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JAMES J. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	*****7993	JBS DIRT, INC.		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL	*****2435	JEFFEL D. JOHNSON	JMJ7 AND SON	5553 CAIRNSTRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JEFFEL JOHNSON ELITE CARPENTER REMODEL AND CONSTRUCTION		C2 EVERGREEN CIRCLE LIVERPOOL NY 13090	11/21/2022	11/21/2027
DOL	DOL	*****2435	JEFFREY M. JOHNSON	JMJ7 AND SON	5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	NYC		JENNIFER GUERRERO		1936 HEMPSTEAD TURNPIKE EAST MEADOW NY 11554	11/29/2019	11/29/2024
DOL	DOL		JIM PLAUGHER		17613 SANTE FE LINE ROAD WAYNEFIELD OH 45896	07/16/2021	07/16/2026
DOL	DOL		JMJ7 & SON CONSTRUCTION, LLC		5553 CAIRNS TRAIL LIVERPOOL NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 AND SONS CONTRACTORS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS		7014 13TH AVENUE BROOKLYN NY 11228	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS AND SONS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS, LLC		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JOHN GOCEK		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL		JOHN MARKOVIC		47 MANDON TERRACE HAWTHORN NJ 07506	03/29/2021	03/29/2026
DOL	DOL		JOHN WASE		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	DOL		JON E DEYOUNG		261 MILL RD P.O BOX 296EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	DOL		JORGE RAMOS		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	DOL		JOSEPH K. SALERNO		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL		JOSEPH K. SALERNO II		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027

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DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		JRN CONSTRUCTION CO, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
DOL	DOL		KARIN MANGIN		796 PHELPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	DOL		KATE E. CONNOR		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KEAN INDUSTRIES, LLC		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL	*****2959	KELC DEVELOPMENT, INC		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KIMBERLY F. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL		KMA GROUP II, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL	*****1833	KMA GROUP INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KMA INSULATION, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KRIN HEINEMANN		2345 ROUTE 52, SUITE 2N HOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	NYC		KULWANT S. DEOL		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	AG	*****3291	LINTECH ELECTRIC, INC.		3006 TILDEN AVE BROOKLYN NY 11226	02/16/2022	02/16/2027
DOL	DOL		LOUIS A. CALICCHIA		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	NYC		LUBOMIR PETER SVOBODA		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	NYC		M & L STEEL & ORNAMENTAL IRON CORP.		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	DOL	*****2196	MAINSTREAM SPECIALTIES, INC.		11 OLD TOWN RD SELKIRK NY 12158	02/02/2021	02/02/2026
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	DOL		MAQSOOD AHMAD		618 OCEAN PKWY BROOKLYN NY 11230	09/17/2020	09/17/2025
DOL	NYC		MARIA NUBILE		84-22 GRAND AVENUE ELMHURST NY 11373	03/10/2020	03/10/2025
DOL	DOL	*****4829	MILESTONE ENVIRONMENTAL CORPORATION		704 GINESI DRIVE SUITE 29MORGANVILLE NJ 07751	04/10/2019	04/10/2024
DOL	NYC	*****9926	MILLENNIUM FIRE PROTECTION, LLC		325 W. 38TH STREET SUITE 204NEW YORK NY 10018	11/14/2019	11/14/2024
DOL	NYC	*****0627	MILLENNIUM FIRE SERVICES, LLC		14 NEW DROP LNE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024

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DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	NYC		MUHAMMED A. HASHEM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	NYC		NAMOW, INC.		84-22 GRAND AVENUE ELMHURST NY 11373	03/10/2020	03/10/2025
DOL	DOL	*****7790	NATIONAL BUILDING & RESTORATION CORP		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****1797	NATIONAL CONSTRUCTION SERVICES, INC		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	NYC		NAVIT SINGH		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		NELCO CONTRACTING, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DA		NICHOLAS T. ANALITIS		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL	*****7429	NICOLAE I. BARBIR	BESTUCCO CONSTRUCTION, INC.	444 SCHANTZ ROAD ALLEN TOWN PA 18104	09/17/2020	09/17/2025
DOL	NYC	*****5643	NYC LINE CONTRACTORS, INC.		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		PAULINE CHAHALES		935 S LAKE BLVD MAHOPAC NY 10541	03/02/2021	03/02/2026
DOL	DOL		PETER STEVENS		11 OLD TOWN ROAD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DOL		PETER STEVENS		8269 21ST ST BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	DOL	*****0466	PRECISION BUILT FENCES, INC.		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	NYC		RASHEL CONSTRUCTION CORP		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	*****1068	RATH MECHANICAL CONTRACTORS, INC.		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP.		3 PARK CIRCLE MIDDLETOWN NY 10940	07/11/2022	07/11/2027
DOL	DA	*****7559	REGAL CONTRACTING INC.		24 WOODBINE AVE NORTHPORT NY 11768	10/01/2020	10/01/2025
DOL	DOL		RICHARD REGGIO		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
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		5 MORNINGSIDE DRIVE AUBURN NY 13021	05/28/2019	05/28/2024
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	07/11/2022	07/11/2027
DOL	DOL		RONALD MESSEN		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL	*****7172	RZ & AL INC.		198 RIDGE AVENUE VALLEY STREAM NY 11581	06/06/2022	06/06/2027
DOL	DOL		SAL FRESINA MASONRY CONTRACTORS, INC.		1935 TEALL AVENUE SYRACUSE NY 13206	07/16/2021	07/16/2026
DOL	DOL		SAL MASONRY CONTRACTORS, INC.		(SEE COMMENTS) SYRACUSE NY 13202	07/16/2021	07/16/2026
DOL	DOL	*****9874	SALFREE ENTERPRISES INC		P.O BOX 14 2821 GARDNER RD POMPEI NY 13138	07/16/2021	07/16/2026

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DOL	DOL		SALVATORE A FRESINA A/K/A SAM FRESINA		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13218	07/16/2021	07/16/2026
DOL	DOL		SAM FRESINA		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13218	07/16/2021	07/16/2026
DOL	NYC	*****0349	SAM WATERPROOFING INC		168-42 88TH AVENUE APT.1 AJAMAICA NY 11432	11/20/2019	11/20/2024
DOL	DA	*****0476	SAMCO ELECTRIC CORP.		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	NYC	*****1130	SCANA CONSTRUCTION CORP.		863 WASHINGTON STREET FRANKLIN SQUARE NY 11010	03/10/2020	03/10/2025
DOL	DOL	*****2045	SCOTT DUFFIE	DUFFIE'S ELECTRIC, INC.	P.O BOX 111 CORNWALL NY 12518	03/03/2020	03/03/2025
DOL	DOL		SCOTT DUFFIE		P.O BOX 111 CORNWALL NY 12518	03/03/2020	03/03/2025
DOL	DA		SILVANO TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DOL	*****0440	SOLAR GUYS INC.		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	NYC		SOMATIE RAMSUNAHAI		115-46 132ND ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	DOL	*****2221	SOUTH BUFFALO ELECTRIC, INC.		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	NYC	*****3661	SPANIER BUILDING MAINTENANCE CORP		200 OAK DRIVE SYOSSET NY 11791	03/14/2022	03/14/2027
DOL	DOL		STANADOS KALOGELAS		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL	*****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL	*****6844	STEAM PLANT AND CHX SYSTEMS INC.		14B COMMERCIAL AVENUE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL	*****9933	STEED GENERAL CONTRACTORS, INC.		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL	*****9528	STEEL-IT, LLC.		17613 SANTE FE LINE ROAD WAYNESFIELD OH 45896	07/16/2021	07/16/2026
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	*****3800	SUBURBAN RESTORATION CO. INC.		5-10 BANTA PLACE FAIR LAWN PLACE NJ 07410	03/29/2021	03/29/2026
DOL	DOL	*****9150	SURGE INC.		8269 21ST STREET BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	DOL		SYED RAZA		198 RIDGE AVENUE NY 11581	06/06/2022	06/06/2027
DOL	DOL		TERRY THOMPSON		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	DOL	*****9733	TERSAL CONSTRUCTION SERVICES INC		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13208	07/16/2021	07/16/2026
DOL	DOL		TERSAL CONTRACTORS, INC.		221 GARDNER RD P.O BOX 14POMPEI NY 13138	07/16/2021	07/16/2026
DOL	DOL		TERSAL DEVELOPMENT CORP.		1935 TEALL AVENUE SYRACUSE NY 13206	07/16/2021	07/16/2026
DOL	DOL	*****5766	THE COKER CORPORATION	COKER CORPORATION	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		TIMOTHY PERCY		29807 ANDREWS ROAD BLACK RIVER NY 13612	10/17/2023	10/17/2028
DOL	DA	*****1050	TRI STATE CONSTRUCTION OF NY CORP.		50-39 175TH PLACE FRESH MEADOWS NY 11365	03/28/2022	03/28/2027
DOL	DA	*****4106	TRIPLE H CONCRETE CORP		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****8210	UPSTATE CONCRETE & MASONRY CONTRACTING CO INC		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	*****6418	VALHALLA CONSTRUCTION, LLC.		796 PHEPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	NYC	*****2426	VICKRAM MANGRU	VICK CONSTRUCTION	21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	NYC		VICKRAM MANGRU		21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025

**NYSDOL Bureau of Public Work Debarment List 03/29/2024**

**Article 8**

DOL	DOL		VIKTORIA RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	NYC	*****3673	WALTERS AND WALTERS, INC.		465 EAST AND THIRD ST MT. VERNON NY 10550	09/09/2019	09/09/2024
DOL	DOL	*****3296	WESTERN NEW YORK CONTRACTORS, INC.		3841 LAYNARD COURT NEW PORT RICHEY FL 34652	07/09/2019	07/09/2024
DOL	DOL	*****8266	WILLIAM CHRIS MCCLENDON	MCCLENDON ASPHALT PAVING	1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM CHRIS MCCLENDON		1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM G. PROERFRIEDT		85 SPRUCEWOOD ROAD WEST BABYLON NY 11704	01/19/2021	01/19/2026
DOL	DOL	*****5924	WILLIAM G. PROPHY, LLC	WGP CONTRACTIN G, INC.	54 PENTAQUIT AVE BAYSHORE NY 11706	01/19/2021	01/19/2026
DOL	DOL		XENOFON EFTHIMIADIS		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028



**EXHIBIT E**

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**NEW YORK STATE DIVISION OF HOMELAND SECURITY AND EMERGENCY SERVICES  
SUPPLEMENTARY CONDITIONS FOR FEMA MITIGATION ASSISTANCE CONTRACTS**

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“FEMA” – The Federal Emergency Management Agency.

“DHSES” – The New York State Division of Homeland Security and Emergency Services (“DHSES”) and its successors and assigns.

“Subrecipient”:

“Contractor”:

Subrecipient shall attach these Supplementary Conditions to any contract for which any portion of the funding is derived from a grant made by FEMA through DHSES under the Mitigation Grant (Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM) or Flood Mitigation Assistance (FMA). References in the Supplementary Conditions to the “Agreement” or “agreement” or “Contract” or “contract” shall be deemed to refer to the agreement between such the Subrecipient and the Contractor.

Contractors at all tiers shall attach these Supplementary Conditions to all subcontracts, and shall require that all subcontractors attach these conditions to their sub-subcontracts at all levels. When these Supplementary Conditions are attached to any lower tier contract (e.g., a contract between Contractor (as defined above) and any subcontractor, or between Contractor’s direct or indirect subcontractors), references herein to “Subrecipient” shall be deemed to refer to the party seeking products and/or services, and references to “Contractor” shall be deemed to refer to the party providing products and/or services, and references to the “Agreement” or “agreement” or “Contract” or “contract” shall be deemed to refer to the agreement between such subcontracting parties.

Any question should be submitted in writing (indicating the issue and the applicable provisions) by Subrecipient to DHSES, and DHSES shall decide the applicable question.

## **REQUIRED FEDERAL PROVISIONS**

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The following terms and conditions apply to any contract for which any portion of the funding is derived from a grant made by FEMA through DHSES under the Hazard Mitigation Assistance Programs.

### **GENERAL CONDITIONS**

1. **PROVISIONS REQUIRED BY LAW DEEMED INSERTED.** Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion or correction.

2. **STATUTORY AND REGULATORY COMPLIANCE.** Contractor shall comply with all laws and regulations applicable to the Mitigation Grant funds, including but not limited to the applicable Office of Management and Budget Circulars, which may impact the administration of funds and/or set forth certain cost principles, including the allowability of certain expenses.

3. **BREACH OF CONTRACT TERMS.** The Subrecipient and DHSES reserve their rights to all administrative, contractual, or legal remedies, including but not limited to suspension or termination of this contract, in instances where the Contractor or any of its subcontractors violate or breach any contract term. If the Contractor or any of its subcontractors violate or breach any contract term, they shall be subject to such sanctions and penalties as may be appropriate. The duties and obligations imposed by the contract documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

4. **ADMINISTRATIVE, COST, AUDIT AND PROGRAM REQUIREMENTS.** The Contractor must comply with the most recent version (unless a specific version is noted) of the Administrative Requirements, Cost Principles, and Audit requirements, and to the extent necessary cooperate and maintain information and documentation to allow DHSES to comply with the applicable regulations governing the FEMA-State Agreement. Failure to do so may result in disallowance of costs upon audit. A list of regulations and guidance applicable to United States Department of Homeland Security (DHS) grants is listed below:

- a) 2 C.F.R. Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards
- b) 2 C.F.R. Part 215, Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, & other Non-Profit Organizations
- c) 2 C.F.R. Part 200 (OMB Circular A-87), Subpart E, Cost Principles
- d) 2 C.F.R. Part 220 (OMB Circular A-21), Cost Principles for Educational Institutions

- e) OMB Circular A-122, Cost Principles for Nonprofit Organizations
- f) 2 C.F.R. Part 200, Subpart F, Audit Requirements
- g) OMB Circulars A-94 and A-133
- h) For Projects funded with Hazard Mitigation Grant Funds.
  - i. New York State Administrative Plan for the Hazard Mitigation Program
  - ii. Sections 203 (PDM) and 404 (HMGP) of the Stafford Act
  - iii. Sections 1323 (RFC), 1361A (SRL), 1366 (FMA) of the NFIA
  - iv. National Flood Insurance Reform Act of 1994
  - v. Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004
  - vi. Section 322 of the Stafford Act (Mitigation Planning)
  - vii. Section 324 of the Stafford Act (Management Costs)
  - viii. Hazard Mitigation Planning (44 C.F.R. Part 201)
  - ix. Hazard Mitigation Grant Program (44 C.F.R. Part 206, Subpart N)
  - x. Management Costs (44 C.F.R. Part 207)
  - xi. 44 C.F.R. Parts 7, 9, 10, 13, 14, 17, 18, 25, 206, 220, and 221, and any other applicable FEMA policy memoranda and guidance documents
  - xii. OMB Circular A-94
  - xiii. Other applicable Federal, State, Indian Tribal, and local laws, implementing regulations, and Executive Orders.

**5. RECORDS AND REPORTING REQUIREMENTS.** The Contractor shall establish and maintain complete Records, including accurate books, records, documents, accounts and other evidence directly pertinent to performance of work done for the Subrecipient under this Contract consistent with generally accepted bookkeeping practices. Contractor shall retain the Records, including all financial records, supporting documents, statistical records, and all other records pertinent to the Agreement in accordance with Section 17 below. The Subrecipient, DHSES, and any person or entity authorized to conduct an examination shall have access to the Records during normal business hours at an office of the Contractor within the State of New York or, if no such office is available, at a mutually agreeable and reasonable venue within the State, for the term specified above for the purposes of inspection, auditing and copying. The Subrecipient and DHSES shall take reasonable steps to protect from public disclosure any of the Records which are exempt from disclosure under Section 87 of the Public Officers Law (the “Statute”) provided that: (i) the Contractor shall timely inform the Subrecipient and DHSES, in writing, that said records should not be disclosed; and (ii) said records shall be sufficiently identified; and (iii) designation of said records as exempt under the Statute is reasonable. Nothing contained herein shall diminish, or in any way adversely affect, the Subrecipient’s or DHSES’s right to discovery in any pending or future litigation. The Contractor shall complete and submit all reports, in such form and according to such schedule, as may be required by the Subrecipient and DHSES. The Contractor shall cooperate with all Subrecipient and DHSES efforts to comply with FEMA requirements and regulations pertaining to reporting, including but not limited to 44 C.F.R. Part 13 (October 1, 2012) and 44 C.F.R. Part 206 (October 1, 2012).

**6. RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT.** Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the federal government, DHSES, and the Subrecipient in any resulting invention in accordance with 37 C.F.R. Part 401, “Rights to Inventions Made by

Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by FEMA.

7. **DEBARMENT AND SUSPENSION.** This contract is a covered transaction for purposes of 2 C.F.R. Part 180 and 2 C.F.R. Part 3000. As such the Contractor is required to verify that none of the Contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935). The contractor must comply with 2 C.F.R. Part 180, subpart C and 2 C.F.R. Part 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction (e.g., subcontract) it enters into. This certification is a material representation of fact relied upon by Subrecipient. If it is later determined that the contractor did not comply with 2 C.F.R. Part 180, subpart C and 2 C.F.R. Part 3000, subpart C, in addition to remedies available to DHSES and Subrecipient, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 2 C.F.R. Part 180, subpart C and 2 C.F.R. Part 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

8. **CONFLICTS OF INTEREST.** The Contractor shall notify the Subrecipient as soon as possible if this contract or any aspect related to the anticipated work under this contract raises an actual or potential conflict of interest (as described in 2 C.F.R. Part 200). The Contractor shall explain the actual or potential conflict in writing in sufficient detail so that the Subrecipient is able to assess such actual or potential conflict. The Contractor shall provide the Subrecipient any additional information necessary for the Subrecipient to fully assess and address such actual or potential conflict of interest. The Contractor shall accept any reasonable conflict mitigation strategy employed by the Subrecipient, including but not limited to the use of an independent subcontractor(s) to perform the portion of work that gives rise to the actual or potential conflict. If requested by DHSES, Contractor shall sign a certification affirming that it has no conflict of interest arising from performance of work on a specific task.

9. **SUBCONTRACTING.** The Contractor represents to the Subrecipient that all work shall be performed by personnel experienced in the appropriate and applicable profession and areas of expertise, taking into account the nature of the work to be performed under this contract. The Contractor will include these Required Federal Provisions in every subcontract issued by it so that such provisions will be binding upon each of its subcontractors as well as the requirement to flow down such terms to all lower-tiered subcontractors.

10. **ASSIGNABILITY.** The Contractor shall not assign any interest in this contract, and shall not transfer any interest in the same (whether by assignment or novation) without prior written approval of the Subrecipient.

11. **INDEMNIFICATION.** The Contractor shall indemnify, defend, and hold harmless the Subrecipient, DHSES, and their agents and employees from and against any and all claims, actions, suits, charges, and judgments arising from or related to the negligence or willful misconduct of the Contractor in the performance of the services called for in this contract.

**12. TERMINATION FOR CAUSE (Applicable to contracts exceeding \$10,000).** If, through any cause, the Contractor shall fail to fulfill in a timely and proper manner his obligations under this contract, or if the Contractor shall violate any of the covenants, agreements, or stipulations of this contract, the Subrecipient shall thereupon have the right to terminate this contract by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least five (5) days before the effective date of such termination. In such event, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, and reports prepared by the Contractor under this contract shall, at the option of the Subrecipient, become the Subrecipient's property and the Contractor shall be entitled to receive just and equitable compensation for any work satisfactorily completed hereunder. Notwithstanding the above, the Contractor shall not be relieved of liability to the Subrecipient for damages sustained by the Subrecipient by virtue of any breach of the contract by the Contractor, and the Subrecipient may withhold any payments to the Contractor for the purpose of set-off until such time as the exact amount of damages due the Subrecipient from the Contractor is determined.

**13. TERMINATION FOR CONVENIENCE (Applicable to contracts exceeding \$10,000).** The Subrecipient may terminate this contract at any time by giving at least ten (10) days' notice in writing to the Contractor. If the contract is terminated by the Subrecipient as provided herein, the Contractor will be paid for the time provided and expenses incurred up to the termination date.

**14. LOBBYING (Applicable to contracts exceeding \$100,000).** The Contractor certifies, to the best of his or her knowledge and belief, that:

- A. No federal appropriated funds have been paid or will be paid, by or on behalf of the Contractor, 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.
- B. 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 Contractor shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- C. The Contractor 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 31 U.S.C. § 1352. 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.

**15. BONDING REQUIREMENTS (Applicable to construction and facility improvement contracts exceeding \$100,000).** The Contractor shall comply with New York State bonding requirements, unless they have not been approved by FEMA, in which case the Contractor shall comply with the following minimum bonding requirements:

- A. A bid guarantee from each bidder equivalent to five percent of the bid price. The “bid guarantee” shall consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of his bid, execute such contractual documents as may be required within the time specified.
- B. A performance bond on the part of the Contractor for 100 percent of the contract price. A “performance bond” is one executed in connection with a contract to secure fulfillment of all the Contractor’s obligations under such contract.
- C. A payment bond on the part of the Contractor for 100 percent of the contract price. A “payment bond” is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

**16. AUDIT / ACCESS TO RECORDS.** The Subrecipient, DHSES, FEMA, the Comptroller General of the United States, New York State Office of State Comptroller, pertinent federal agencies, and other designated entities, or any of their duly authorized representatives, shall have, at any time and from time to time during normal business hours, access to any work product, books, documents, papers, and records of the Contractor which are related to this contract, for the purpose of inspection, audits, examinations, and making excerpts, copies and transcriptions. Such audits may include review of the Contractor's accounting, financial, and reporting practices to determine compliance with the Contract and reporting requirements; maintenance of accurate and reliable original accounting records in accordance with governmental accounting standards as well as generally accepted accounting principles; and specific compliance with allowable cost and expenditure documentation standards prescribed by applicable federal, State, and DHSES guidelines.

**17. MAINTENANCE/RETENTION OF RECORDS.** Contractor shall retain all financial records, supporting documents, statistical records, and all other records pertinent to the Agreement (collectively, the “Records”) (i) for three (3) years from the time of closeout of FEMA’s grant to the State or for the period provided in 2 C.F.R. Part 200, or (ii) for six (6) years after the closeout of the Agreement, or, as long as required by state law, whichever may be longer.

**18. COPYRIGHT.** Any creative or literary work developed or commissioned by the Contractor with grant support provided by DHSES shall become the property of DHSES, entitling DHSES to assert a copyright therein, unless the parties have expressly agreed otherwise in a written

instrument signed by them.

- A. If DHSES shares its right to copyright such work with the Contractor, DHSES reserves a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use: (a) the copyright in any work developed under a grant, sub-grant, or contract under a grant or sub-grant; and (b) any rights of copyright to which a Contractor, sub-Contractor, or a contractor purchases ownership with grant support.
- B. If the grant support provided by DHSES is federally-sponsored, the federal awarding agency also reserves a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use: (a) the copyright in any work developed under a grant, sub-grant or contract under a grant or sub-grant; and (b) any rights of copyright to which a Contractor, sub-Contractor, or a contractor purchases ownership with such grant support.
- C. The Contractor shall submit one copy of all reports and publications resulting from this Contract to DHSES within thirty (30) calendar days of completion. Any document generated pursuant to this grant must contain the following language:

“This project was supported by a grant administered by the New York State Division of Homeland Security and Emergency Services and the U.S. Department of Homeland Security. Points of view in this document are those of the author and do not necessarily represent the official position or policies of the New York State Division of Homeland Security and Emergency Services or the U.S. Department of Homeland Security.”

### **CIVIL RIGHTS AND DIVERSITY PROVISIONS**

**19. SMALL AND MINORITY FIRMS, WOMEN’S BUSINESS ENTERPRISES, AND LABOR SURPLUS AREA FIRMS.** The Contractor will comply with the small and minority firms, women’s business enterprise, and labor surplus area requirements as set forth at 2 C.F.R. Part 200. Contractor will use its best efforts to afford small businesses, minority business enterprises, and women’s business enterprises the maximum practicable opportunity to participate in the performance of the contract. As used in these Required Federal Provisions, the terms “small business” means a business that meets the criteria set forth in Section 3(a) of the Small Business Act, as amended (15 U.S.C. § 632), and “minority and women’s business enterprise” means a business at least fifty-one (51) percent owned and controlled by minority group members or women. For the purpose of this definition, “minority group members” are Afro-Americans, Spanish-speaking, Spanish surnamed, or Spanish-heritage Americans, Asian-Americans, and American Indians. Subrecipient may rely on written representations by businesses regarding their status as minority and female business enterprises in lieu of an independent investigation.

The Contractor will take necessary affirmative steps to assure that minority firms, women’s business enterprises, and labor surplus area firms are used in subcontracting when possible. Steps include:

- A. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
- B. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
- C. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises;
- D. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises; and
- E. Using the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce.

**20. TITLES VI AND VIII OF THE CIVIL RIGHTS ACT OF 1964 AND EXECUTIVE ORDER 11063.** The Contractor shall comply with the provisions of Titles VI and VIII of the Civil Rights Act of 1964 and with Executive Order 11063. No person shall, on the grounds of race, color, religion, sex, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. No person shall, on the grounds of race, color, religion, sex, or national origin, be discriminated against in the sale, rental, or financing of dwellings. To the extent that any such sale, lease or other transfer of land shall occur, Contractor, in undertaking its obligation to carry out the Program assisted hereunder, will not itself so discriminate.

**21. SECTION 504 OF THE REHABILITATION ACT OF 1973 AND THE AMERICANS WITH DISABILITIES ACT OF 1990.** The Contractor shall comply with section 504 of the Rehabilitation Act of 1973 (29 U.S.C. § 794), as amended, and any applicable regulations, and with the Americans with Disabilities Act of 1990 (42 U.S.C. § 126), as amended, and any applicable regulations. The Contractor agrees that no qualified individual with handicaps shall, solely on the basis of handicap, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity that receives federal financial assistance from FEMA.

**22. AGE DISCRIMINATION ACT OF 1975.** The Contractor shall comply with the Age Discrimination Act of 1975 (42 U.S.C. § 6101 et seq.), as amended, and any applicable regulations. No person in the United States shall, on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under, any program or activity receiving federal financial assistance.

**23. NONDISCRIMINATION.** The Contractor shall comply with other federal and state statutory, regulatory and constitutional non-discrimination provisions. During the performance of this contract, the Contractor agrees as follows:



- A. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- C. The Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Contractor's legal duty to furnish information.
- D. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- E. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- F. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- G. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible

for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

- H. The Contractor will include the portion of the sentence immediately preceding paragraph (A) and the provisions of paragraphs (A) through (H) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: *Provided*, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

With respect to construction contracts and subcontracts exceeding \$10,000, The Contractor shall comply with Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity," as amended by Executive Order 11375 of October 13, 1967; Executive Order 11478 of August 8, 1969; Executive Order 12107 of December 28, 1978; Executive Order 12086 of October 5, 1978; and as supplemented in Department of Labor regulations (41 C.F.R. Part 60). Subrecipient shall include the following Specifications, which are required pursuant to 41 C.F.R. 60-4.3 in all federally assisted contracts and subcontracts. For the purposes of the Equal Opportunity Construction Contract Specifications and Clause below, the term "Construction Work" means the construction, rehabilitation, alteration, conversion, extension, demolition or repair of buildings, highways, or other changes or improvements to real property, including facilities providing utility services. The term also includes the supervision, inspection, and other onsite functions incidental to the actual construction.

**Standard Federal Equal Employment Opportunity Construction Contract Specifications for Contracts and Subcontracts in Excess of \$10,000. (Federal Notice Required by 41 C.F.R. 60-4.3)**

1. As used in these specifications:
  - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
  - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
  - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

- d. "Minority" includes:
- (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
  - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
  - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
  - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the contractor or any subcontractor at any tier, subcontracts a portion of the work involving any Construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this Agreement resulted.

3. If the contractor is participating (pursuant to 41 C.F.R. § 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7 a through p of these specifications. The goals set forth in the solicitation from which this Agreement resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each Construction trade in which it has employees in the covered area. Covered Construction contractors performing Construction Work in geographical areas where they do not have a Federal or federally assisted Construction contract shall apply the minority and female goals established for the geographical areas where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the contractor during the training period, and the contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each Construction project. The contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organization's responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or woman sent by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.

- f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where Construction Work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of Construction Work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a contractor's work force.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 C.F.R. Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.
- n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female Construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the Program are reflected in the contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. Goals for minorities and women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally, the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246 or suspended or is otherwise excluded from or ineligible for participation in federal assistance programs.

12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 C.F.R. § 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, Construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for hiring of local or other areas residents.

**24. CERTIFICATION OF NONSEGREGATED FACILITIES (Applicable to construction contracts exceeding \$10,000).** The Contractor certifies that it does not maintain or provide for its establishments, and that it does not permit employees to perform their services at any location, under its control, where segregated facilities are maintained. It certifies further that it will not maintain or provide for employees any segregated facilities at any of its establishments, and it will not permit employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this certification is a violation of the nondiscrimination clause of this contract.

As used in this certification, the term “segregated facilities” means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, 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 any other reason.

The Contractor further agrees that (except where it has obtained for specific time periods) it will obtain identical certification from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the nondiscrimination clause; that it will retain such certifications in its files; and that it will forward the preceding notice to such proposed subcontractors (except where proposed subcontractors have submitted identical certifications for specific time periods).

**25. SECTION 503 OF THE REHABILITATION ACT OF 1973 (Applicable to contracts exceeding \$10,000).** The Contractor shall comply with section 503 of the Rehabilitation Act of 1973 (29 U.S.C. § 793), as amended, and any applicable regulations.

A. The Contractor will not discriminate against any employee or applicant for employment because of physical or mental disability in regard to any position for which the employee

or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals with disabilities without discrimination based on their physical or mental disability in all employment practices, including the following:

1. Recruitment, advertising, and job application procedures;
  2. Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;
  3. Rates of pay or any other form of compensation and changes in compensation;
  4. Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;
  5. Leaves of absence, sick leave, or any other leave;
  6. Fringe benefits available by virtue of employment, whether or not administered by the Contractor;
  7. Selection and financial support for training, including apprenticeship, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;
  8. Activities sponsored by the Contractor including social or recreational programs; and
  9. Any other term, condition, or privilege of employment.
- B. The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the act.
- C. In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the act.
- D. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, provided by or through the contracting officer. Such notices shall state the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants with disabilities. The Contractor must ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair).
- E. The Contractor will notify each labor organization or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of section 503 of the Rehabilitation Act of 1973, as amended, and is committed to take affirmative action to employ and advance in employment individuals with physical or mental disabilities.
- F. The Contractor will include the provisions of this clause in every subcontract or purchase order in excess of \$10,000, unless exempted by the rules, regulations, or orders of the



Secretary issued pursuant to section 503 of the Act, as amended, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Deputy Assistant Secretary for Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance.

## **LABOR PROVISIONS**

**26. COPELAND “ANTI-KICKBACK” ACT (Applicable to all construction or repair contracts).** Salaries of personnel performing work under this contract shall be paid unconditionally and not less often than once a month without payroll deduction or rebate on any account except only such payroll deductions as are mandatory by law or permitted by the applicable regulations issued by the Secretary of Labor pursuant to the Copeland “Anti-Kickback Act” of June 13, 1934 (48 Stat. 948; 62 Stat. 740; 63 Stat. 108; 18 U.S.C. § 874; and 40 U.S.C. § 276c). The Contractor shall comply with all applicable “Anti-Kickback” regulations and shall insert appropriate provisions in all subcontracts covering work under this contract to ensure compliance by subcontractors with such regulations, and shall be responsible for the submission of affidavits required of subcontractors thereunder except as the Secretary of Labor may specifically provide for variations of or exemptions from the requirements thereof.

**27. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (Applicable to construction contracts exceeding \$2,000 and contracts exceeding \$2,500 that involve the employment of mechanics or laborers).** The Contractor shall comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 327-330) as supplemented by Department of Labor regulations (29 C.F.R. Part 5). All laborers and mechanics employed by contractors or subcontractors shall receive overtime compensation in accordance with and subject to the provisions of the Contract Work Hours and Safety Standards Act, and the contractors and subcontractors shall comply with all regulations issued pursuant to that act and with other applicable federal laws and regulations pertaining to labor standards.

**28. DAVIS-BACON ACT AND OTHER LABOR COMPLIANCE (Applicable to construction contracts exceeding \$2,000 when required by federal program legislation).** The Contractor shall comply with the Davis Bacon Act (40 U.S.C. §§ 276a to 276a-7) as supplemented by Department of Labor regulations (29 C.F.R. Part 5), and all other applicable federal, state, and local laws and regulations pertaining to labor standards insofar as they apply to the performance of this agreement.

All laborers and mechanics employed by contractors or subcontractors, including employees of other governments, on construction work assisted under this contract, and subject to the provisions of the Federal acts and regulations listed in this paragraph, shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with the Davis Bacon Act. The Contractor shall maintain documentation that demonstrates compliance with hour and wage requirements of this part. Such documentation shall be made available to Subrecipient and DHSES for review upon request.

If Contractor is engaged under a contract in excess of \$2,000 for construction, renovation, or repair work financed in whole or in part with assistance provided by DHSES, Contractor agrees, except with respect to the rehabilitation or construction of residential property containing less than eight (8) units, to comply and to cause all subcontractors engaged under such contracts to comply with federal requirements adopted by DHSES pertaining to such contracts and with the applicable requirements of the Department of Labor under 29 C.F.R. Parts 1, 3, 5, and 7 governing the payment of wages and ratio of apprentices and trainees to journey workers; provided that, if wage rates higher than those required under the regulations are imposed by state or local law, nothing hereunder is to relieve Contractor of its obligation, if any, to require payment of the higher wage. Contractor shall cause or require to be inserted in full, in all such contracts subject to such regulations, provisions meeting the requirements of this paragraph.

### **ENVIRONMENTAL PROVISIONS**

**29. ENERGY EFFICIENCY.** The Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the New York State energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Public Law 94-163).

**30. SOLID WASTE DISPOSAL.** Pursuant to 2 C.F.R. § 200.322, Contractor must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (codified at 42 U.S.C. § 6962). The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 C.F.R. Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

**31. CERTIFICATION OF COMPLIANCE WITH ENVIRONMENTAL LAWS.**

The Contractor and all subcontractors agree to comply with the following requirements (and their state and/or local counterparts or analogues, if any) insofar as they apply to the performance of this Agreement as any of the following may hereinafter be amended, superseded, replaced, or modified:

- A. Executive Order 11988, Floodplain Management, May 24, 1977 (42 FR 26951, 3 C.F.R., 1977 Comp., p. 117, as interpreted at 24 C.F.R. Part 55), and Executive Order 11990, Protection of Wetlands, May 24, 1977 (42 FR 26961, 3 C.F.R., 1977 Comp., p. 121);
- B. Coastal Zone Management Act of 1972, as amended (16 U.S.C. § 1451 *et seq.*);

- C. Safe Drinking Water Act of 1974 (42 U.S.C. 201, 300(f) *et seq.*, and 21 U.S.C. § 349, as amended), and EPA regulations for Sole Source Aquifers (40 C.F.R. Part 149);
- D. Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*);
- E. Wild and Scenic Rivers Act of 1968, as amended (16 U.S.C. § 1271 *et seq.*);
- F. Clean Air Act, as amended (42 U.S.C. § 7401 *et seq.*);
- G. EPA regulations for Determining Conformity of Federal Actions to State or Federal Implementation Plans (40 C.F.R. Parts 6, 51, and 93);
- H. Farmland Protection Policy Act of 1981 (7 U.S.C. § 4201 *et seq.*), and USDA regulations at 7 C.F.R. Part 658;
- I. FEMA criteria and environmental policy;
- J. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Feb. 11, 1994 (59 FR 7629, 3 C.F.R., 1994 Comp. p. 859);
- K. Flood Disaster Protection Act of 1973, as amended (42 U.S.C. § 4001-4128);
- L. National Flood Insurance Reform Act of 1994 (42 U.S.C. § 5154a);
- M. Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 (16 U.S.C. § 3501);
- N. Runway Clear Zone regulations (24 C.F.R. Part 51);
- O. Federal Water Pollution Control Act, as amended (33 U.S.C. § 1251, *et seq.*), commonly known as the Clean Water Act, and all regulations and guidelines issued thereunder;
- P. Environmental Protection Agency (“EPA”) regulations at 40 C.F.R Part 50, as amended;
- Q. All other applicable environmental laws that may exist now or in the future.

Further, Contractor shall abide by any conditions or requirements set forth in any environmental review performed by FEMA in furtherance of implementing the National Environmental Policy Act.

In addition to the foregoing requirements, all nonexempt contractors and subcontractors shall furnish to the Subrecipient, the following:

- A. A stipulation by the Contractor or subcontractors, that any facility to be utilized in the performance of any nonexempt contract or subcontract, is not listed on the Excluded Party

Listing System pursuant to 40 C.F.R. Part 32 or on the List of Violating Facilities issued by the EPA pursuant to 40 C.F.R. Part 15, as amended.

- B. Agreement by the Contractor to comply with all the requirements of Section 114 of the Clean Air Act, as amended, (42 U.S.C. § 1857 c-8) and Section 308 of the Federal Water Pollution Control Act, as amended, (33 U.S.C. § 1318) relating to inspection, monitoring, entry, reports and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.
- C. A stipulation that as a condition for the award of the contract, prompt notice will be given of any notification received from the Director, Office of Federal Activities, EPA, indicating that a facility utilized, or to be utilized for the contract, is under consideration to be listed on the Excluded Party Listing System or the EPA List of Violating Facilities.
- D. Agreement by the Contractor that he will include, or cause to be included, the criteria and requirements in paragraphs A through D of this section in every nonexempt subcontract and requiring that the Contractor will take such action as the government may direct as a means of enforcing such provisions.

**APPENDIX A**

**STANDARD CLAUSES FOR NEW YORK STATE CONTRACTS**

**PLEASE RETAIN THIS DOCUMENT  
FOR FUTURE REFERENCE.**

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## STANDARD CLAUSES FOR NYS CONTRACTS

The parties to the attached contract, license, lease, amendment or other agreement of any kind (hereinafter, “the contract” or “this contract”) agree to be bound by the following clauses which are hereby made a part of the contract (the word “Contractor” herein refers to any party other than the State, whether a contractor, licenser, licensee, lessor, lessee or any other party):

**1. EXECUTORY CLAUSE.** In accordance with Section 41 of the State Finance Law, the State shall have no liability under this contract to the Contractor or to anyone else beyond funds appropriated and available for this contract.

**2. NON-ASSIGNMENT CLAUSE.** In accordance with Section 138 of the State Finance Law, this contract may not be assigned by the Contractor or its right, title or interest therein assigned, transferred, conveyed, sublet or otherwise disposed of without the State’s previous written consent, and attempts to do so are null and void. Notwithstanding the foregoing, such prior written consent of an assignment of a contract let pursuant to Article XI of the State Finance Law may be waived at the discretion of the contracting agency and with the concurrence of the State Comptroller where the original contract was subject to the State Comptroller’s approval, where the assignment is due to a reorganization, merger or consolidation of the Contractor’s business entity or enterprise. The State retains its right to approve an assignment and to require that any Contractor demonstrate its responsibility to do business with the State. The Contractor may, however, assign its right to receive payments without the State’s prior written consent unless this contract concerns Certificates of Participation pursuant to Article 5-A of the State Finance Law.

**3. COMPTROLLER’S APPROVAL.** In accordance with Section 112 of the State Finance Law, if this contract exceeds \$50,000 (or \$75,000 for State University of New York or City University of New York contracts for goods, services, construction and printing, and \$150,000 for State University Health Care Facilities) or if this is an amendment for any amount to a contract which, as so amended, exceeds said statutory amount, or if, by this contract, the State agrees to give something other than money when the value or reasonably estimated value of such consideration exceeds \$25,000, it shall not be valid, effective or binding upon the State until it has been approved by the State Comptroller and filed in his office. Comptroller’s approval of contracts let by the Office of General Services, either for itself or its customer agencies by the Office of General Services Business Services Center, is required when such contracts exceed \$85,000. Comptroller’s approval of contracts established as centralized contracts through the Office of General Services is required when such contracts exceed \$125,000, and when a purchase order or other procurement transaction issued under such centralized contract exceeds \$200,000.

**4. WORKERS’ COMPENSATION BENEFITS.** In accordance with Section 142 of the State Finance Law, this contract shall be void and of no force and effect unless the Contractor shall provide and maintain coverage during the life of this contract for the benefit of such employees as are required to be covered by the provisions of the Workers’ Compensation Law.

**5. NON-DISCRIMINATION REQUIREMENTS.** To the extent required by Article 15 of the Executive Law (also known as the Human Rights Law) and all other State and Federal statutory and constitutional non-discrimination provisions, the Contractor will not discriminate against any employee or applicant for employment, nor subject any individual to harassment, because of age, race, creed, color, national origin, citizenship or immigration status, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, familial status, marital status, or domestic violence victim status or because the individual has opposed any practices forbidden under the Human Rights Law or has filed a complaint, testified, or assisted in any proceeding under the Human Rights Law. Furthermore, in accordance with Section 220-e of the Labor Law, if this is a contract for the construction, alteration or repair of any public building or public work or for the manufacture, sale or distribution of materials, equipment or supplies, and to the extent that this contract shall be performed within the State of New York, Contractor agrees that neither it nor its subcontractors shall, by reason of race, creed, color, disability, sex, or national origin: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. If this is a building service contract as defined in Section 230 of the Labor Law, then, in accordance with Section 239 thereof, Contractor agrees that neither it nor its subcontractors shall by reason of race, creed, color, national origin, age, sex or disability: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. Contractor is subject to fines of \$50.00 per person per day for any violation of Section 220-e or Section 239 as well as possible termination of this contract and forfeiture of all moneys due hereunder for a second or subsequent violation.

**6. WAGE AND HOURS PROVISIONS.** If this is a public work contract covered by Article 8 of the Labor Law or a building service contract covered by Article 9 thereof, neither Contractor’s employees nor the employees of its subcontractors may be required or permitted to work more than the number of hours or days stated in said statutes, except as otherwise provided in the Labor Law and as set forth in prevailing wage and supplement schedules issued by the State Labor Department. Furthermore, Contractor and its subcontractors must pay at least the prevailing wage rate and pay or provide the prevailing supplements, including the premium rates for overtime pay, as determined by the State Labor Department in

accordance with the Labor Law. Additionally, effective April 28, 2008, if this is a public work contract covered by Article 8 of the Labor Law, the Contractor understands and agrees that the filing of payrolls in a manner consistent with Subdivision 3-a of Section 220 of the Labor Law shall be a condition precedent to payment by the State of any State approved sums due and owing for work done upon the project.

**7. NON-COLLUSIVE BIDDING CERTIFICATION.** In accordance with Section 139-d of the State Finance Law, if this contract was awarded based upon the submission of bids, Contractor affirms, under penalty of perjury, that its bid was arrived at independently and without collusion aimed at restricting competition. Contractor further affirms that, at the time Contractor submitted its bid, an authorized and responsible person executed and delivered to the State a non-collusive bidding certification on Contractor's behalf.

**8. INTERNATIONAL BOYCOTT PROHIBITION.** In accordance with Section 220-f of the Labor Law and Section 139-h of the State Finance Law, if this contract exceeds \$5,000, the Contractor agrees, as a material condition of the contract, that neither the Contractor nor any substantially owned or affiliated person, firm, partnership or corporation has participated, is participating, or shall participate in an international boycott in violation of the federal Export Administration Act of 1979 (50 USC App. Sections 2401 et seq.) or regulations thereunder. If such Contractor, or any of the aforesaid affiliates of Contractor, is convicted or is otherwise found to have violated said laws or regulations upon the final determination of the United States Commerce Department or any other appropriate agency of the United States subsequent to the contract's execution, such contract, amendment or modification thereto shall be rendered forfeit and void. The Contractor shall so notify the State Comptroller within five (5) business days of such conviction, determination or disposition of appeal (2 NYCRR § 105.4).

**9. SET-OFF RIGHTS.** The State shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but not be limited to, the State's option to withhold for the purposes of set-off any moneys due to the Contractor under this contract up to any amounts due and owing to the State with regard to this contract, any other contract with any State department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the State for any other reason including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto. The State shall exercise its set-off rights in accordance with normal State practices including, in cases of set-off pursuant to an audit, the finalization of such audit by the State agency, its representatives, or the State Comptroller.

**10. RECORDS.** The Contractor shall establish and maintain complete and accurate books, records, documents, accounts and other evidence directly pertinent to performance under this contract (hereinafter, collectively, the "Records"). The Records

must be kept for the balance of the calendar year in which they were made and for six (6) additional years thereafter. The State Comptroller, the Attorney General and any other person or entity authorized to conduct an examination, as well as the agency or agencies involved in this contract, shall have access to the Records during normal business hours at an office of the Contractor within the State of New York or, if no such office is available, at a mutually agreeable and reasonable venue within the State, for the term specified above for the purposes of inspection, auditing and copying. The State shall take reasonable steps to protect from public disclosure any of the Records which are exempt from disclosure under Section 87 of the Public Officers Law (the "Statute") provided that: (i) the Contractor shall timely inform an appropriate State official, in writing, that said records should not be disclosed; and (ii) said records shall be sufficiently identified; and (iii) designation of said records as exempt under the Statute is reasonable. Nothing contained herein shall diminish, or in any way adversely affect, the State's right to discovery in any pending or future litigation.

**11. IDENTIFYING INFORMATION AND PRIVACY NOTIFICATION.** (a) Identification Number(s). Every invoice or New York State Claim for Payment submitted to a New York State agency by a payee, for payment for the sale of goods or services or for transactions (e.g., leases, easements, licenses, etc.) related to real or personal property must include the payee's identification number. The number is any or all of the following: (i) the payee's Federal employer identification number, (ii) the payee's Federal social security number, and/or (iii) the payee's Vendor Identification Number assigned by the Statewide Financial System. Failure to include such number or numbers may delay payment. Where the payee does not have such number or numbers, the payee, on its invoice or Claim for Payment, must give the reason or reasons why the payee does not have such number or numbers.

(b) Privacy Notification. (1) The authority to request the above personal information from a seller of goods or services or a lessor of real or personal property, and the authority to maintain such information, is found in Section 5 of the State Tax Law. Disclosure of this information by the seller or lessor to the State is mandatory. The principal purpose for which the information is collected is to enable the State to identify individuals, businesses and others who have been delinquent in filing tax returns or may have understated their tax liabilities and to generally identify persons affected by the taxes administered by the Commissioner of Taxation and Finance. The information will be used for tax administration purposes and for any other purpose authorized by law. (2) The personal information is requested by the purchasing unit of the agency contracting to purchase the goods or services or lease the real or personal property covered by this contract or lease. The information is maintained in the Statewide Financial System by the Vendor Management Unit within the Bureau of State Expenditures, Office of the State Comptroller, 110 State Street, Albany, New York 12236.



**12. EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITIES AND WOMEN.**

In accordance with Section 312 of the Executive Law and 5 NYCRR Part 143, if this contract is: (i) a written agreement or purchase order instrument, providing for a total expenditure in excess of \$25,000.00, whereby a contracting agency is committed to expend or does expend funds in return for labor, services, supplies, equipment, materials or any combination of the foregoing, to be performed for, or rendered or furnished to the contracting agency; or (ii) a written agreement in excess of \$100,000.00 whereby a contracting agency is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon; or (iii) a written agreement in excess of \$100,000.00 whereby the owner of a State assisted housing project is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon for such project, then the following shall apply and by signing this agreement the Contractor certifies and affirms that it is Contractor's equal employment opportunity policy that:

(a) The Contractor will not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status, shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on State contracts and will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. Affirmative action shall mean recruitment, employment, job assignment, promotion, upgradings, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation;

(b) at the request of the contracting agency, the Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein; and

(c) the Contractor shall state, in all solicitations or advertisements for employees, that, in the performance of the State contract, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

Contractor will include the provisions of "(a), (b) and (c)" above, in every subcontract over \$25,000.00 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (the "Work") except where the Work is for the beneficial use of the Contractor. Section 312 does not

apply to: (i) work, goods or services unrelated to this contract; or (ii) employment outside New York State. The State shall consider compliance by a contractor or subcontractor with the requirements of any federal law concerning equal employment opportunity which effectuates the purpose of this clause. The contracting agency shall determine whether the imposition of the requirements of the provisions hereof duplicate or conflict with any such federal law and if such duplication or conflict exists, the contracting agency shall waive the applicability of Section 312 to the extent of such duplication or conflict. Contractor will comply with all duly promulgated and lawful rules and regulations of the Department of Economic Development's Division of Minority and Women's Business Development pertaining hereto.

**13. CONFLICTING TERMS.** In the event of a conflict between the terms of the contract (including any and all attachments thereto and amendments thereof) and the terms of this Appendix A, the terms of this Appendix A shall control.

**14. GOVERNING LAW.** This contract shall be governed by the laws of the State of New York except where the Federal supremacy clause requires otherwise.

**15. LATE PAYMENT.** Timeliness of payment and any interest to be paid to Contractor for late payment shall be governed by Article 11-A of the State Finance Law to the extent required by law.

**16. NO ARBITRATION.** Disputes involving this contract, including the breach or alleged breach thereof, may not be submitted to binding arbitration (except where statutorily authorized), but must, instead, be heard in a court of competent jurisdiction of the State of New York.

**17. SERVICE OF PROCESS.** In addition to the methods of service allowed by the State Civil Practice Law & Rules ("CPLR"), Contractor hereby consents to service of process upon it by registered or certified mail, return receipt requested. Service hereunder shall be complete upon Contractor's actual receipt of process or upon the State's receipt of the return thereof by the United States Postal Service as refused or undeliverable. Contractor must promptly notify the State, in writing, of each and every change of address to which service of process can be made. Service by the State to the last known address shall be sufficient. Contractor will have thirty (30) calendar days after service hereunder is complete in which to respond.

**18. PROHIBITION ON PURCHASE OF TROPICAL HARDWOODS.** The Contractor certifies and warrants that all wood products to be used under this contract award will be in accordance with, but not limited to, the specifications and provisions of Section 165 of the State Finance Law, (Use of Tropical Hardwoods) which prohibits purchase and use of tropical hardwoods, unless specifically exempted, by the State or any governmental agency or political subdivision or public benefit corporation. Qualification for an exemption under this

law will be the responsibility of the contractor to establish to meet with the approval of the State.

In addition, when any portion of this contract involving the use of woods, whether supply or installation, is to be performed by any subcontractor, the prime Contractor will indicate and certify in the submitted bid proposal that the subcontractor has been informed and is in compliance with specifications and provisions regarding use of tropical hardwoods as detailed in § 165 State Finance Law. Any such use must meet with the approval of the State; otherwise, the bid may not be considered responsive. Under bidder certifications, proof of qualification for exemption will be the responsibility of the Contractor to meet with the approval of the State.

**19. MACBRIDE FAIR EMPLOYMENT PRINCIPLES.** In accordance with the MacBride Fair Employment Principles (Chapter 807 of the Laws of 1992), the Contractor hereby stipulates that the Contractor either (a) has no business operations in Northern Ireland, or (b) shall take lawful steps in good faith to conduct any business operations in Northern Ireland in accordance with the MacBride Fair Employment Principles (as described in Section 165 of the New York State Finance Law), and shall permit independent monitoring of compliance with such principles.

**20. OMNIBUS PROCUREMENT ACT OF 1992.** It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority- and women-owned business enterprises as bidders, subcontractors and suppliers on its procurement contracts.

Information on the availability of New York State subcontractors and suppliers is available from:

NYS Department of Economic Development  
Division for Small Business and Technology Development  
625 Broadway  
Albany, New York 12245  
Telephone: 518-292-5100

A directory of certified minority- and women-owned business enterprises is available from:

NYS Department of Economic Development  
Division of Minority and Women's Business Development  
633 Third Avenue 33rd Floor  
New York, NY 10017  
646-846-7364  
email: [mwbebusinessdev@esd.ny.gov](mailto:mwbebusinessdev@esd.ny.gov)  
<https://ny.newnycontracts.com/FrontEnd/searchcertifieddirectory.asp>

The Omnibus Procurement Act of 1992 (Chapter 844 of the Laws of 1992, codified in State Finance Law § 139-i and Public Authorities Law § 2879(3)(n)-(p)) requires that by signing this bid proposal or contract, as applicable, Contractors certify that whenever the total bid amount is greater than \$1 million:

(a) The Contractor has made reasonable efforts to encourage the participation of New York State Business Enterprises as suppliers and subcontractors, including certified minority- and women-owned business enterprises, on this project, and has retained the documentation of these efforts to be provided upon request to the State;

(b) The Contractor has complied with the Federal Equal Opportunity Act of 1972 (P.L. 92-261), as amended;

(c) The Contractor agrees to make reasonable efforts to provide notification to New York State residents of employment opportunities on this project through listing any such positions with the Job Service Division of the New York State Department of Labor, or providing such notification in such manner as is consistent with existing collective bargaining contracts or agreements. The Contractor agrees to document these efforts and to provide said documentation to the State upon request; and

(d) The Contractor acknowledges notice that the State may seek to obtain offset credits from foreign countries as a result of this contract and agrees to cooperate with the State in these efforts.

**21. RECIPROCITY AND SANCTIONS PROVISIONS.** Bidders are hereby notified that if their principal place of business is located in a country, nation, province, state or political subdivision that penalizes New York State vendors, and if the goods or services they offer will be substantially produced or performed outside New York State, the Omnibus Procurement Act 1994 and 2000 amendments (Chapter 684 and Chapter 383, respectively, codified in State Finance Law § 165(6) and Public Authorities Law § 2879(5)) require that they be denied contracts which they would otherwise obtain. NOTE: As of May 2023, the list of discriminatory jurisdictions subject to this provision includes the states of South Carolina, Alaska, West Virginia, Wyoming, Louisiana and Hawaii.

**22. COMPLIANCE WITH BREACH NOTIFICATION AND DATA SECURITY LAWS.** Contractor shall comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law §§ 899-aa and 899-bb and State Technology Law § 208).

**23. COMPLIANCE WITH CONSULTANT DISCLOSURE LAW.** If this is a contract for consulting services, defined for purposes of this requirement to include analysis, evaluation, research, training, data processing, computer programming, engineering, environmental, health, and mental health services, accounting, auditing, paralegal, legal or similar services, then, in accordance with Section 163 (4)(g) of the State Finance Law (as amended by Chapter 10 of the Laws of 2006), the Contractor shall timely, accurately and properly comply with the requirement to submit an annual employment report for the contract to the agency that awarded the contract, the Department of Civil Service and the State Comptroller.

**24. PROCUREMENT LOBBYING.** To the extent this agreement is a “procurement contract” as defined by State Finance Law §§ 139-j and 139-k, by signing this agreement the contractor certifies and affirms that all disclosures made in accordance with State Finance Law §§ 139-j and 139-k are complete, true and accurate. In the event such certification is found to be intentionally false or intentionally incomplete, the State may terminate the agreement by providing written notification to the Contractor in accordance with the terms of the agreement.

**25. CERTIFICATION OF REGISTRATION TO COLLECT SALES AND COMPENSATING USE TAX BY CERTAIN STATE CONTRACTORS, AFFILIATES AND SUBCONTRACTORS.**

To the extent this agreement is a contract as defined by Tax Law § 5-a, if the contractor fails to make the certification required by Tax Law § 5-a or if during the term of the contract, the Department of Taxation and Finance or the covered agency, as defined by Tax Law § 5-a, discovers that the certification, made under penalty of perjury, is false, then such failure to file or false certification shall be a material breach of this contract and this contract may be terminated, by providing written notification to the Contractor in accordance with the terms of the agreement, if the covered agency determines that such action is in the best interest of the State.

**26. IRAN DIVESTMENT ACT.** By entering into this Agreement, Contractor certifies in accordance with State Finance Law § 165-a that it is not on the “Entities Determined to be Non-Responsive Bidders/Offerers pursuant to the New York State Iran Divestment Act of 2012” (“Prohibited Entities List”) posted at: <https://ogs.ny.gov/iran-divestment-act-2012>

Contractor further certifies that it will not utilize on this Contract any subcontractor that is identified on the Prohibited Entities List. Contractor agrees that should it seek to renew or extend this Contract, it must provide the same certification at the time the Contract is renewed or extended. Contractor also agrees that any proposed Assignee of this Contract will be required to certify that it is not on the Prohibited Entities List before the contract assignment will be approved by the State.

During the term of the Contract, should the state agency receive information that a person (as defined in State Finance Law § 165-a) is in violation of the above-referenced certifications, the state agency will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then the state agency shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Contractor in default.

The state agency reserves the right to reject any bid, request for assignment, renewal or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

**27. ADMISSIBILITY OF REPRODUCTION OF CONTRACT.** Notwithstanding the best evidence rule or any other legal principle or rule of evidence to the contrary, the Contractor acknowledges and agrees that it waives any and all objections to the admissibility into evidence at any court proceeding or to the use at any examination before trial of an electronic reproduction of this contract, in the form approved by the State Comptroller, if such approval was required, regardless of whether the original of said contract is in existence.

## DIVISION 1 GENERAL REQUIREMENTS

## SECTION 01010 – SUMMARY OF WORK

## PART 1 - GENERAL

**1.1 DESCRIPTION**

- A. The basis of payment is located in Section 00440.
- B. This section clarifies, modifies, deletes from, or adds to the various provisions of all other sections and particular portions of the work. This section shall be used in conjunction with every other section in order to determine the total requirements under each section.
- C. Work for this project is included in one (1) construction contract.

**1.2 SCOPE OF WORK**

## A. General

- 1. The Contractor shall be subject to non-payment of items for non-compliance with contract requirements for maintenance and protection of traffic, restoration of surfaces and erosion and sediment control, as outlined in Supplementary Conditions of this Contract Document.
- 2. This contract shall include all work set forth in the plans and specifications required to complete the improvements described. The descriptive narrative prepared for the contract has been structured to define the general work required. There is no intention, either implied or otherwise, that these narratives accurately or completely list all items of work to be undertaken as part of the contract. Any necessary work which is not specifically described in the contract documents shall be included in the contract. Where used herein, the words "included" or "including" shall mean "including but not restricted to". The contract shall include all labor, material, equipment, and other expenses required to perform the work specified. Work shall be performed in accordance with all applicable permits.
- 3. The work will be in close proximity to existing underground utility lines. The Contractor shall notify all utilities at least two days prior to any excavation. The Contractor shall fully familiarize himself with all existing piping and underground facilities. The Contractor shall protect existing facilities. The Contractor shall utilize every precaution to protect such structures and utilities from any and all damage, with the understanding that all damage shall be repaired or replaced as directed by the Engineer at no additional cost to the Owner.
- 4. The Contractor shall provide and install all suitable signs, barricades, and other protective devices for the maintenance and protection of traffic for the proposed work. The minimum standards shall be as set forth in the Federal Highway Administration Manual of Uniform Traffic Control Devices. The Maintenance and Protection of Traffic devices shall be installed to the satisfaction of the Engineer for the duration of the Contract. All requirements of the New York State Department of Transportation must also be followed.
- 5. The Contractor and Subcontractors shall ensure that the work area is adequately secured with temporary fence and other safety devices whenever work is unattended in order to protect the public.
- 6. Temporary drives shall be furnished as necessary during construction.
- 7. The Contractor shall protect all existing features, utilities, or structures for the duration of the contract. The Contractor shall provide all shoring and bracing necessary to protect existing features. Damage to existing features, utilities, or structures as a result of work under this contract shall be replaced by the Contractor at no additional cost to the Owner. Items temporarily removed, with the Engineer's approval, shall be replaced in-kind upon completion of the project and to the satisfaction of the Owner.
- 8. All temporary easements shall be obtained by the General Contractor as necessary prior to start of work.

9. The Contractor shall provide erosion control and dewatering to the satisfaction of the Engineer for the duration of the contract.
10. The Contractor is alerted to the fact that the Town of Lloyd has received a grant from NYSDHSES for the project. The Contractor will comply with all provisions and requirements of the granting agency.
11. All costs for 1-9 above shall be included in the appropriate bid items.

**B. Contractor**

1. The Contractor shall video record, on USB drive, the limits of the project and work area prior to start of work. Four (4) copies of the Engineer-approved USB drive shall be furnished to the Owner prior to the start of work. The cost shall be included in the cost of the Mobilization bid item.
2. The Contractor shall complete all work as shown on the Contract Plans. The work consists of, but not limited to: the installation of water main and associated materials, site work and grading, all surface restoration, maintenance and protection of traffic, and erosion and sediment control.
3. The Contractor shall furnish and install the concrete pad, generator, transfer switch, gas service, and conduit and wiring including rock removal, trench excavation, conduit bedding, backfill, testing, surface restoration, as shown on the contract plans and/or as directed by the Engineer. All work shall be completed within the existing rights-of-way or temporary or permanent easements. The location of the all items and appurtenances as shown on the contract plans may be modified, with approval of the Engineer, in order to protect existing facilities.
4. The Contractor shall be responsible for locating utilities during installation all items and conform to the requirements of the utility owner for crossings.
5. Restoration of existing pavement, shoulder and field/grass surfaces shall be completed by the Contractor in a timely manner.
6. The Contractor shall complete all grading shown on the drawings.
7. This scope of work is intended as a general summary of the contract work and may not be all inclusive. Any other work indicated elsewhere in the contract documents.

END OF SECTION

SECTION 01027 – PROJECT COMPLETION PROCEDURES

PART 1 - GENERAL

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Completion procedures.

**1.2 CONTRACT CONDITIONS**

- A. See the conditions of the contract for additional requirements.
- B. Payments may be withheld if the contractor fails to make dated submittals within the time periods specified.

**1.3 DEFINITIONS**

- A. Final Completion: The stage at which all incomplete and incorrect work has been completed or corrected in accordance with the contract documents.
- B. List of Incomplete and/or Unacceptable Work: A comprehensive list of items prepared by the Contractor and reviewed by the Engineer, to be completed or corrected, by the Contractor prior to obtaining certification of substantial completion. This list is also referred to as a "punchlist."
  - 1. The Engineer will not inspect the work until receiving and reviewing the list of incomplete and/or unacceptable work from the contractor.
- C. Substantial Completion: The time at which the work, or a portion of the work which the owner agrees to accept separately, is sufficiently complete in accordance with the contract documents so that the owner can occupy or use the work for its intended purpose.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

**3.1 SUBSTANTIAL COMPLETION PROCEDURES**

- A. Request for inspection and application for payment may coincide.
- B. The Engineer will perform inspection for substantial completion, upon request of the contractor.
  - 1. When issuance of several certificates of substantial completion for portions of a single prime contract is authorized by the owner, the above provisions apply separately to each separate portion.
- C. Do not submit request for inspection for substantial completion until the following activities have been completed:
  - 1. Delivery of maintenance materials and tools.
  - 2. Demonstration of all equipment and systems.
  - 3. Removal of temporary facilities.
  - 4. Changeover to permanent locking systems.
  - 5. The owner has been informed of necessary procedures for changing over insurance coverages.
  - 6. The owner has been informed of procedures for changing over operation, maintenance, security, etc.

7. The owner has received occupancy and operating permits from authorities having jurisdiction.
  8. All activities specified to occur prior to substantial completion.
- D. Do not submit request for inspection for substantial completion until the following submittals have been completed:
1. List of incomplete work.
  2. Warranties.
  3. Maintenance agreements.
  4. Operation and maintenance data.
  5. All submittals specified to occur prior to substantial completion.
- E. Submit the following with application for payment at substantial completion:
1. Contractor's affidavit of release of liens.
  2. Request for reduction or release of retainage.
  3. Consent of surety to reduction in or partial release of retainage.
  4. Other data required by the contract documents.

### **3.2 FINAL COMPLETION PROCEDURES**

- A. Request for final inspection and final application for payment may coincide.
- B. The Engineer will perform inspection for final completion, upon request of the contractor.
1. Submit the following with request for inspection:
    - a. Previous inspection lists indicating completion of all items.
    - b. If any items cannot be completed, obtain prior approval of such delay.
- C. Submit the following with the final application for payment:
1. Certified copy of the previous list of items to be completed or corrected, stating that each has been completed or otherwise resolved for acceptance.
  2. Updated final statement, accounting for final changes to the contract sum.
  3. Consent of Surety to Final Payment – shall be AIA Document G707.
  4. Contractors Affidavit of Payment of Debts and Claims – shall be AIA Document G706 and G706A.
  5. Description of unsettled claims.
  6. Project record documents.
  7. Other data required by the contract documents.

END OF SECTION



## SECTION 01028 – MODIFICATION PROCEDURES

## PART 1 - GENERAL

**1.1 SECTION INCLUDES**

- A. Administrative and procedural requirements for handling and processing Contract modifications.

**1.2 MINOR CHANGES IN THE WORK**

- A. Supplemental instructions authorizing minor changes or clarifications of the Work, not involving an adjustment to the Contract Sum or Contract Time, will be issued by the Engineer.

**1.3 CHANGE ORDER PROPOSAL REQUESTS**

- A. Owner-Initiated Proposal Request: Proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time will be issued by the Engineer, with a detailed description of the proposed change and supplemental or revised Drawings and Specifications, if necessary.
1. Proposal requests issued by the Engineer are for information only. Do not consider them an instruction either to stop work in progress, or to execute the proposed change.
  2. Unless otherwise indicated in the proposal request, within 10 days of receipt of the proposal request, submit to the Engineer for the Owner's review an estimate of cost necessary to execute the proposed change. The response shall include the following items as a minimum.
    - a. The amount of change in the Contract Sum.
    - b. The amount of change in the Contract Time.
    - c. Quantities and unit costs of products, labor and equipment.
    - d. Applicable delivery charges, equipment rental, trade discounts, taxes, insurance and bonds.
    - e. Overhead and profit.
    - f. The period of time within which the proposed changes in the Contract Sum or Contract Time will be valid.
    - g. A statement describing the effect the change may have on the work of other prime contractors.
- B. Contractor-Initiated Change Order Proposal Request: When latent or other unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Engineer.
1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
  2. Provide all the information required for the Contractor's response to an Owner-Initiated Proposal Request.

**1.4 CONSTRUCTION CHANGE DIRECTIVE**

- A. When the Owner and Contractor are not in total agreement on the terms of a Change Order Proposal Request, the Engineer may issue a Construction Change Directive instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
- B. The Construction Change Directive will contain a complete description of the change in the Work and designate the method to be followed to determine change in the Contract Sum or Time.

- C. Contractor shall maintain detailed records on a time and material basis of work required by the Construction Change Directive. After completion of the change, submit an itemized ac-count and supporting data necessary to substantiate cost and time adjustments to the Contract.

### **1.5 CHANGE ORDER PROCEDURES**

- A. Upon the Owner's approval of a Change Order Proposal Request, the Engineer will issue a Change Order for signatures of the Owner and Contractor.
- B. The Change Order form to be used on projects funded by USDA Rural Development shall be EJCDC No. C-941. Agency approval, by signature, is required before Change Orders are effective and valid.

### **1.6 SUBSTITUTIONS**

- A. It is the Contractor's responsibility to select products which comply with the contract documents and which are compatible with one another, with existing work, and with products selected by other contractors.
- B. Do not use any substitute products until approval is attained.
- C. Substitutions will be considered within 30 days after the award of the contract; subsequent requests will be considered only when, through no fault of the Contractor, none of the specified products is available.
- D. The Contractor will be notified in writing within a reasonable time; verbal acceptance will not be valid.
- E. Acceptable substitutions will be added to the contract documents by appropriate modification.
- F. Submission of request for substitution shall constitute a representation by the Contractor that he:
1. Has investigated the proposed product and determined that it is equal to or better than the specified product.
  2. Will provide the same warranty for the proposed product as for the specified project.
  3. Will coordinate the installation and make other changes which may be required for the work to be complete in all respects including redesign and additional work affected by the change.
  4. Waives all claims for additional costs and time extensions which subsequently may become apparent and which are caused by the change.
- G. Substitution Request Procedure:
1. Submit written request with complete data substantiating compliance of the proposed product with the requirements of the contract documents.
  2. Identify product by specification section and paragraph number.
  3. Manufacturer's name and address, trade name, and model number of product, and name of fabricator or supplier.
  4. Complete product data.
  5. Description of changes that will be required in other work or products if the substitute product is approved.

END OF SECTION

## SECTION 01060 – CODES AND STANDARDS

## PART 1 - GENERAL

**1.1 CODES, STANDARDS, AND SPECIFICATIONS**

- A. Whenever reference is made to any published standards, codes, or standard specifications, it shall mean the latest standard code, specification, or tentative specification of the technical society, organization or body referred to, which is in effect on the date shown on the Drawings, except where a specific date of a standard or code is specified. Where specified articles, sections, paragraphs, or other subdivisions of the referenced publications are not stated, the referenced publication shall apply in full, except where specifically noted otherwise.
- B. When required by Engineer, furnish satisfactory evidence that materials and methods are in compliance with the referenced standards and codes.
- C. Obtain copies of standards when required by contract documents and maintain at job site until substantial completion.
- D. Should specified reference standards conflict with contract documents, request clarification from Engineer before proceeding.
- E. The contractual relationship of the parties shall not be altered by mention or interference contained in any reference document.

**1.2 ABBREVIATIONS - ORGANIZATIONS**

The following is a partial list of abbreviations which may be used in the specifications and the organizations to which they refer:

AA	ALUMINUM ASSOCIATION
AAN	AMERICAN ASSOCIATION OF NURSERYMEN
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ACI	AMERICAN CONCRETE INSTITUTE
AGA	AMERICAN GAS ASSOCIATION
AI	ASPHALT INSTITUTE
AIA	AMERICAN INSTITUTE OF ARCHITECTS
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
AMCA	AIR MOVING AND CONDITIONING ASSOCIATION, INC.
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AREA	AMERICAN RAILWAY ENGINEERING ASSOCIATION
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE
ASA	AMERICAN STANDARDS ASSOCIATION
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWPA	AMERICAN WOOD PRESERVERS' ASSOCIATION
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION

**TOL HUDSON RIVER PUMP STATION GENERATOR**

R21.16218.00

CODES AND STANDARDS

01060 - 2

CMB	CERTIFIED BALLAST MANUFACTURERS
CSRI	CONCRETE REINFORCING STEEL INSTITUTE
DEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DHUD	U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
EIA	ELECTRONIC INDUSTRIES ASSOCIATION
EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA)
ETL	ELECTRICAL TESTING LABORATORIES, INC.
FM	FACTORY MUTUAL LABORATORIES
FmHA	FARMERS HOME ADMINISTRATION, U.S. DEPARTMENT OF AGRICULTURE
FS	FEDERAL SPECIFICATION
HIS	HYDRAULIC INSTITUTE STANDARDS
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IPCEA	INSULATED POWER CABLE ENGINEERS ASSOCIATION
MBFU	NATIONAL BOARD OF FIRE UNDERWRITERS
MUTCD	MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NYSS	NEW YORK STATE STANDARD SPECIFICATIONS
OSHA	U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PS	PRODUCT STANDARD
SCS	U.S. SOIL CONSERVATION SERVICE
SDI	STEEL DOOR INSTITUTE
SSPC	STEEL STRUCTURES PAINTING COUNCIL
UFP&BC	UNIFORM FIRE PREVENTION AND BUILDING CODE
UL	UNDERWRITERS LABORATORIES, INC
WWPA	WESTERN WOOD PRODUCTS ASSOCIATION

END OF SECTION

SECTION 01090 – PHOTOGRAPHS AND VIDEO

PART 1 - GENERAL

**1.1 SUMMARY**

- A. This Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction videos.
  - 2. Periodic construction videos and photographs.
  - 3. Final Completion construction videos.

**1.2 SUBMITTALS**

- A. Construction Photography: Submit digital images with each photo submission.
  - 1. Identification: Provide an applied label or rubber-stamped impression with the following information:
    - a. Name of Project.
    - b. Name and address of photographer.
    - c. Name of Engineer.
    - d. Name of Contractor.
    - e. Date photograph was taken if not date stamped by camera.
    - f. Description of vantage point, indicating location, direction (by compass point)
    - g. Unique sequential identifier.
  - 2. Digital Images: Submit a complete set of digital image electronic files with each submittal on DVD or flash drive. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.
- B. Pre-construction and Completion Videos: Submit video recordings in AVI, MPG or other acceptable format to the Owner’s Agent on DVD or flash drive within seven days of taking videos.
  - 1. Identification: On back of each video, label with the following information:
    - a. Name of Project.
    - b. Name and address of photographer.
    - c. Name of Engineer.
    - d. Name of Contractor.
    - e. Date video was taken.
    - f. Description of vantage point, indicating location, direction (by compass point)
    - g. Unique sequential identifier

**1.3 COORDINATION**

- A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

**1.4 USAGE RIGHTS**

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

**PART 2 - PRODUCTS**

**2.1 PHOTOGRAPHIC MEDIA**

- A. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1600 by 1200 pixels.
- B. Videos: Provide video recordings in AVI, MPG or other format acceptable to the Engineer.

**PART 3 - EXECUTION**

**3.1 CONSTRUCTION PHOTOGRAPHS**

- A. Photographer: Engage a qualified photographer to take pre construction and completion videos. Display continuous running time and date. Describe scenes on video recording by audio narration. Include description of items being viewed, recent events, and planned activities. Preconstruction video must be taken and submitted prior to start of construction.
- B. General: Take photography using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photography with blurry or out-of-focus areas will not be accepted.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
  - 1. Date and Time: Include date and time in filename for each image.
- D. Progress Photography: Contractor is required to take progress photography approximating the conditions at the close of each payment application period and be submitted concurrently with each payment application.
- E. Digital Photographs: Take sufficient color digital photographs of each installation item to depict installation and work progress.
- F. Completion Construction Video: Take color video after date of Substantial Completion for submission as Project Record Documents. The Completion Video shall duplicate the areas covered by the pre-excavation video and any other areas at which work was performed or restorations made not included in the initial video.

END OF SECTION

## SECTION 01102 – CARE AND PROTECTION OF PROPERTY

## PART 1 - GENERAL

**1.1 RELATED WORK**

- A. General Conditions
- B. Section 01104 - Temporary Controls
- C. Section 01105 - Traffic Regulation
- D. Section 02160 - Clearing and Grubbing
- E. Section 02221 – Pipe and Structure Backfill
- F. Section 02225 - Trenching

**1.2 PROTECTION OF PROPERTY**

- A. Entering or occupying with men, tools, materials or equipment any land other than the right-of-way and easements without written consent from the property owner is prohibited. Provide a copy of the written consent to the ENGINEER. Assume full responsibility for use of said private properties and defend OWNER against all claims for damages from use of same.
- B. Provide and maintain all necessary watchman, barricades, lights and warning signs and take all necessary precautions for the protection and safety of the public, OWNER, ENGINEER and property.
- C. Continuously maintain adequate measures to protect all Work from damage and take all reasonable precautions to protect the public's and OWNER's property from injury or loss arising in connection with this Agreement.
- D. Make good any damage, injury or loss to the Work, property of the OWNER and the public resulting from lack of reasonable protective precautions.
- E. In an emergency affecting the safety of life, the Work, or adjoining property, the CONTRACTOR shall act to prevent such threatened loss or injury without special instructions or authorization from the ENGINEER and in accordance with the General Conditions. Also act, without appeal, if so authorized or instructed by the ENGINEER.
- F. Exercise extreme care to prevent damage to trees, flowers, shrubs, etc. Replace or repair any damaged trees, shrubs, flowers, etc.
- G. Replace or re-erect fences and guard rails taken down or disturbed, to the satisfaction of the ENGINEER.
- H. Locate leach fields prior to excavation. If damaged, repair or replace.
- I. Conduct work in a manner to properly protect all Underground Facilities. Work near Underground Facilities shall be in accordance with the utility's requirements, rules, and regulations. If any utility is damaged, immediately notify the utility involved so that proper inspection and repair can be made.
- J. The OWNER or ENGINEER will attempt to notify the CONTRACTOR of any hazardous condition during non-working hours by telephone. If the OWNER or ENGINEER is unable to reach the CONTRACTOR or the CONTRACTOR fails to correct the hazardous condition utilizing all necessary safety devices within one hour after notification, the OWNER will make all necessary repairs at the expense of the CONTRACTOR. If the hazardous condition is of such a nature, in the

opinion of the ENGINEER, that it should be remedied immediately and the CONTRACTOR is unable or refuses to do so, OWNER's personnel will make all necessary repairs at the expense of the CONTRACTOR.

- K. Prior to construction, install snow fence to protect trees and plantings as shown on the drawings or directed by the Engineer. Secure fence with stakes every five (5) feet.
- L. Maintain drainage throughout construction.

### **1.3 NOTICE TO PROPERTY OWNERS**

- A. Provide property owners at least one day advance notice of pending construction. Keep driveways open and in good condition at all times.

### **1.4 WORK WITHIN HIGHWAY RIGHTS-OF-WAY**

- A. Perform and complete all work within the state, county, and town rights-of-way to the full satisfaction of the various Departments of Public Works concerned.
- B. Conduct operations associated with the Work so as not to interfere with the movement of traffic on highways and with operations of the particular Department of Public Works.
- C. If at any time during the work, traffic, or facilities of the State of New York, county, or town are endangered, immediately do such work as the representative of the particular Department of Public Works concerned may direct to restore safety. The expense of restoring safety based on the directions of the particular Department of Public Works representative shall be born solely by the CONTRACTOR.
- D. Permit inspection by the State of New York, county, town, or village at all times as the Work progresses.
- E. Provide written notice to the State of New York, county, town, or village five (5) days before such work is to begin within their right-of-way.

### **1.5 WORK WITHIN WETLANDS AND WETLAND BUFFER ZONES**

- A. Place all excavators and other heavy equipment on mats and conduct all work from said mats.
- B. Construct suitable erosion control devices with double-staked bales of straw, along the right-of-way line prior to work. Maintain straw bales until permanent vegetation is established in those areas disturbed during the Work. Remove straw bales after vegetation is established.
- C. Refueling, oiling, or greasing of construction equipment is prohibited in all Wetlands or New York State Wetland Buffer Zones.
- D. Provide prompt remedial action to stop, contain, and remove any spilled materials in the event of spillage of petroleum products within Wetlands or Wetlands Buffer Zones.
- E. Remove excess spoils in their entirety off-site in an amount proportionate to the volume of the pipe and any bedding material installed. Maintain original surface elevations.

END OF SECTION



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SECTION 01140 - SUBSTITUTIONS

PART 1 - GENERAL

**1.1 SUBSTITUTIONS**

- A. Reference: Instruction to Bidders.
- B. If Contractor wishes to furnish or use a substitute item of material or equipment or construction method (non-base bid items), he shall make written application to the Owner within thirty (30) days after execution of the Contract, certifying that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equal substance to that specified and be suited to the same use and capable of performing the same function as that specified. Requests for review of substitute items of material and equipment will not be accepted by the Owner from anyone other than the Contractor.
- C. The Contractor shall submit six (6) copies of requests for substitution, including base bid items. Include in the request the following:
1. Complete data substantiating compliance of proposed substitution with Contract documents.
  2. Indication whether or not incorporation or use of the substitute in connection with the work is subject to payment of any license fee or royalty.
  3. For products:
    - a. Product identification, including manufacturer's name and address.
    - b. Manufacturer's literature with product description, performance and test data, and reference standards.
    - c. Samples.
    - d. Name and address of similar projects on which product was used, date of installation, and product performance and maintenance records.
    - e. For Construction Methods:
    - f. Detailed description of proposed method.
    - g. Drawings illustrating methods.
  4. Itemized comparison of proposed substitution with product or method specified.
  5. Data relating to changes in construction schedule.
  6. Relation to separate contracts, if any.
  7. Accurate cost data on proposed substitution in comparison with product or method specified.
- D. In making request for substitution, Contractor represents:
1. He has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.
  2. He will provide the same or better guarantee for substitution as for product or method specified.
  3. He will coordinate installation of accepted substitution into work, making such changes as required in all respects.
  4. He waives all claims for additional costs related to substitution that consequently become apparent.
  5. Cost data is complete and includes all related costs under this Contract.
- E. Substitutions will not be accepted if:
1. They are only shown or implied on Shop Drawings.
  2. Acceptance will require substantial revision of Contract Documents.

3. Substitutions would change design concepts or specifications.
  4. Substitutions would delay completion of the work.
  5. Substitutions involve items for which a manufacturer was declared at time of bidding.
- F. The Owner will determine whether substitute brands or products are equal to those specified in the Contract Documents. No substitute will be ordered or installed without the Owner's prior written acceptance.
- G. The Owner may require the Contractor to furnish at the Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- H. If the Owner determines that a substitute is not equal to that named in the Specifications, the Contractor shall furnish one of the brands or products specified, at no additional cost to the Owner.
- I. Engineering Costs
1. The Owner will record all time required in evaluating substitutions proposed by Contractor and in making any change in the drawings or specifications occasioned thereby. Whether or not the Owner accepts a proposed substitute, the Contractor will reimburse the Owner for the actual costs of the Owner for evaluating any proposed substitute which either does not meet the requirements of the drawings and specifications, or the acceptance of which would require changes to other portions of the work.
  2. Contractor shall reimburse Owner for all associated engineering costs, including redesign, additional shop drawing reviews, investigations, consultant fees and revision of the Contract Documents required because of the substitution.
- J. The time required by the Owner to evaluate and either accept or reject proposed substitutes is included in the contract time and no extension of contract time shall be allowed therefor.

END OF SECTION

SECTION 01210 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing allowances.
  - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
  - 1. Testing and inspecting allowances.
  - 2. Material and Contingency allowances.
- C. Related Sections include the following:
  - 1. Division 1 Section "Modification Procedures" for procedures for submitting and handling Change Orders for allowances.
  - 2. Division 1 Section "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.
  - 3. Divisions 2 through 16 Sections for items of Work covered by allowances.

1.3 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices to show actual cost of testing services for use in fulfillment of each allowance.
- C. Submit invoices, delivery slips and other supporting data to show actual quantities and costs for use in fulfillment of each allowance.
- D. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.4 COORDINATION

- A. Coordinate allowance items with other portions of the Work.

1.5 MATERIAL AND CONTINGENCY ALLOWANCES

- A. Use the material and contingency allowances only as directed by Engineer for Owner's purposes. For contingency allowance, only by Change Orders that indicate amounts to be charged to the allowance.
- B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the material and contingency allowances are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.
- C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.
- D. At Project closeout, credit unused amounts remaining in the material and contingency allowances to Owner by Change Order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

END OF SECTION 01210

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SECTION 01300 - SUBMITTALS

PART 1 - GENERAL

**1.1 DESCRIPTION**

- A. This section generally describes the types of submittals required during construction procedures for making submittals, the preparation of submittals and the times submittals are required.
- B. Additional submissions are required by the Instructions to Bidders and the General Conditions. Such submittals generally include such things as Bids and Bidding Documents, insurance policies, certification of bond and insurance coverage, Applications for Payment, requests for Change Orders, guarantees, permits, certifications and documents required by federal, state, and local authorities, submissions required by utility companies and other persons, firms, or organizations and other such submittals.
- C. The requirements of this Section are general in nature and basically apply to all Sections of the Specifications. Additional submissions and more specific requirements on submissions are contained in the various Specification Sections. In each individual Section, no attempt was made to cover or repeat the submissions contained in this Section and, therefore, the total of all submissions required are the combination of those described in this Section plus those specified in the various other Sections.

**1.2 IDENTIFICATION OF SUBMITTALS**

- A. Completely identify each submittal and resubmittal by providing at least the following information denoted on the cover sheet at the end of this section.
  - 1. Name of Project
  - 2. Name, address, and telephone number of Contractor and Contractor's stamp of approval, indicating that the submission has been thoroughly checked by Contractor for conformance and fit.
  - 3. Name, address, and telephone number of individual, firm, or organization who will be doing the fabrication, supplying or manufacturing of equipment and materials and the name of the individual who may be contacted for further information.
  - 4. Drawing number and Specification Section number to which submittal applies.
  - 5. The location, service, equipment designation and other information to specifically indicate the item for which approval is requested.
  - 6. Whether it is an original submittal (first submission) or a resubmittal (second, third, etc., submission).

Submissions not containing the above will be returned to Contractor, unreviewed by Engineer.

**1.3 COORDINATION OF SUBMITTALS**

- A. Prior to submitting to Engineer, fully coordinate all inter-related work. As a minimum, do the following:
  - 1. Determine and verify all field dimensions and conditions, materials, catalog numbers and similar data.
  - 2. Coordinate with all trades, subcontractors, other contractors, public agencies, and utility companies and secure all necessary approvals, in writing.
  - 3. Clearly indicate any deviations from the Contract Documents.

- B. Make submittals in groups containing all associated items which in some way depend upon each other. This also applies to color charts, as one color may not be able to be selected without the selection of other colors so as to form color coordinated group. Engineer may elect not to review partial, incomplete submissions, whereupon he will notify Contractor of the additional submissions which are required before a review can be made.

#### **1.4 TIMING OF SUBMITTALS**

- A. Make submittals far enough in advance of scheduled dates of installation to provide time for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery. The Engineer will review submittals in a manner as expedient as possible, however, no representation is made as to the amount of time which will be utilized for review.
- B. Submissions may be returned unreviewed, rejected for several reasons, approved conditioned upon submission of related items or for other reasons set forth in the Contract Documents.
- C. Make submissions well in advance as the returning, rejecting, or disapproval of submissions or other similar circumstances are possible and are deemed "avoidable delays" as defined in the General Conditions. Costs for these delays or those attributed to Contractor's tardiness in making submittals shall be borne by the Contractor.

#### **1.5 DESTINATION OF SUBMITTALS**

- A. All submittals shall be electronic and shall be submitted to the Engineer.
- B. The submittal cover page at the end of this section must be completed and submitted as page 1 of all submittals. All submittals shall be in PDF format. Each submittal shall be a separate PDF file.

#### **1.6 CLARITY OF SUBMITTALS**

- A. All printed materials shall be neat, clean, clear, and legible, and of such quality that they can be easily reproduced by normal photocopying or blueprinting machines. Copies not conforming to this paragraph may be returned to the Contractor, unreviewed.

#### **1.7 CONTRACTOR'S REPRESENTATION**

- A. By making a submission, Contractor represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers, and similar data, and that he has checked and coordinated each submission with other contracts at or adjacent to the project site and with the requirements of the Contract Documents. Contractor will sign and date each submittal certifying that it complies with the requirements of the Contract Documents.

#### **1.8 ENGINEER'S REVIEW**

- A. Engineer will review and comment on each submission conforming to the requirements of this Section. Engineer's review and comments shall be considered as a gratuitous service, given as assistance in interpreting the requirements of the Contract, and in no way shall it relieve Contractor of any of his responsibilities under the Contract. Engineer's review will be only for conformance with the design concept of the project and will be confined to general arrangement and compliance with the Contract Document only, and will not be for the purpose of checking dimensions, weights, clearances, fitting, tolerances, interferences, or coordination of trades or contractors. The approval of a separate item does not represent approval of an assembly in which the item functions.



B. Submittals will be marked as follows:

**NO EXCEPTION TAKEN:** The content of this submittal has been reviewed by the Engineer and then found to be in general compliance with the Contract Documents. No further submission of this submittal is required, and the information contained in the submittal may be built into the work in accordance with the terms and conditions of the Contract Documents.

**FURNISH AS CORRECTED:** The content of this submittal has been reviewed by the Engineer and has been found in general to be in compliance with the Contract Documents. The notations made on the submittal, by the Engineer, shall be incorporated into the work in accordance with the terms and conditions of the Contract Documents. No further submission of this submittal is required.

**REVISE AND RESUBMIT:** The content of this submittal has been reviewed by the Engineer, and this review has indicated that additional data and/or modifications to the submitted data or other changes are required to bring the work represented in this submittal into compliance with the Contract Documents. This submittal shall be reviewed and marked in accordance with the Engineer's comments, by the Contractor, and resubmitted to the Engineer for another review. The information contained on the resubmittal shall not be incorporated into the work until the drawing is returned to the Contractor with a "No Exception Taken" or "Furnish as Corrected" stamp.

**REJECTED - SEE REMARKS:** The content of this submittal has been reviewed by the Engineer, and this review has indicated that the work displayed in the submittal is not in compliance with the Contract Documents. The Contractor shall submit another submittal for this portion of the work, which complies with the Contract Documents.

**RECEIVED:** This submittal is accepted on the Project and filed for record purposes only, in accordance with the terms and conditions of the Contract Documents.

C. No payment will be made on any item for which a submission is required if such submission:

1. Has not been made,
2. Has been made but not stamped "No Exception Taken" by Engineer,
3. Has been made and stamped "Furnish As Corrected", but Contractor has not complied with Engineer's notes marked on the submittal,
4. Has been made and stamped "No Exception Taken", but actual item provided does not conform to the shop drawing nor to the Contract Documents.

## 1.9 RESUBMISSIONS

A. Prepare new and additional submissions, make required corrections, and resubmit corrected copies until approved. On or with resubmittals, clearly describe revisions and changes made, other than the corrections requested by Engineer, which did not appear on the previous submissions.

## 1.10 CONTRACTOR'S RESPONSIBILITIES

A. Engineer's approval of submittals shall not relieve Contractor of responsibility for any deviation from the requirements of the Contract Documents unless Contractor has informed Engineer, in writing, of such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall Engineer's approval relieve Contractor from responsibility for errors or omissions in the submittals.

B. No portion of the work requiring a submission shall be commenced until the submission has been approved by Engineer.

**PART 2 - PRODUCTS AND MATERIALS - If Applicable**

**2.1 SCHEDULE OF VALUES**

- A. At least fifteen days prior to the first Application for Payment, submit to Engineer a schedule of values for various portions of the work, including quantities aggregating the total Contract Price, and supported by such data to substantiate its correctness as Engineer may require. Each item in the schedule of values shall include its proper share of overhead and profit. This schedule, when approved by Engineer, shall only be used as a basis for Contractor's Applications for Payment. No payments will be made to Contractor until such Schedule has been submitted and approved by Engineer.
- B. On "unit price" items, the schedule of values shall contain unit prices for various stages of work, such as restoration of surfaces broken down into paved, unpaved, and other types of areas to be restored.
- C. On "per each" or "lump sum" items, break prices down sufficiently to provide a convenient and realistic means for determining the amount of work done during various stages of progress.
- D. Where prices are not broken down sufficiently to accurately determine the value of work completed, Engineer will estimate the value of the work completed and will deduct some amount so as to arrive at a conservative value which will allow Owner to easily complete the work with the unpaid balance. When the required detail in the Schedule of Values is not provided by Contractor, Contractor agrees to accept Engineer's determinations.

**2.2 CERTIFICATIONS**

- A. Submit certifications of compliance whenever required by the Specifications or Engineer. Certifications shall be complete and exact, they shall be properly authenticated by the written signature, in ink, of an owner, officer, or duly authorized representative of the person, firm, or organization issuing such certification, and they shall guarantee that the materials or equipment are in complete conformance with the requirements of these Specifications. Submit the "Certificate of Compliance" attached hereto, or a reasonable facsimile.

**2.3 CONSTRUCTION SCHEDULE**

- A. Within ten days after the signing of the Agreement, submit for Engineer's and Owner's information, a bar chart type construction schedule showing, in detail, the proposed sequence of the work and the estimated date of starting and completing each stage of the work in order to complete the Project within the contract time. Prepare the schedule in a manner so that the actual progress of the work can be recorded and compared with the expected progress. Coordinate the construction schedule with the proposed schedules of other contractors, if any, engaged in work at, or adjacent to, the project site.
- B. Coordinate the work and make every effort to maintain the construction schedule. In the event actual progress begins to lag the schedule, promptly employ additional means or methods of construction to make up the lost time.
- C. Notify the Engineer in writing (1) 72 hours before commencing any work at the site, (2) at least 48 hours before resuming in the case of a temporary suspension of work.
- D. Keep the construction schedule current and revise and resubmit as often as necessary to accurately reflect the conditions of the work, past progress, and anticipated future progress.

## **2.4 SHOP DRAWINGS**

- A. Submit shop drawings for all fabricated work, for all manufactured items and for all other items specifically required by the Specifications. Submit each shop and layout drawing to Engineer in the form of a reproducible transparency accompanied by a black and white print.
- B. After the submittal has been reviewed and the transparency annotated, Engineer will have three blueprints made and will keep these for his records. Engineer will return transparency to the Contractor.
- C. Submit at least six (6) copies of each standard drawing, catalog cut, or other material for which no transparency is available. If a resubmission is not required, Engineer will retain three copies and return the remaining three (3) copies to Contractor.
- D. Subcontractors must submit shop drawings directly to Contractor for checking. Thoroughly check subcontractors' shop drawings for measurements, sizes of members, details, materials, and conformance with the Contract Documents. Return submittals which are found to be inaccurate or in error. Do not submit to Engineer until corrections have been made.
- E. Clearly show the relation of the various parts, and, where the work depends upon field measurements, make measurements and include them on the shop drawings before submitting to Engineer.
- F. Provide a copy of each specific specification section for each submittal, along with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated and, therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.
- G. Reference all submissions to clearly indicate the specification section, location, service and function of each particular item. Submissions for a single item, or group of related items, shall be complete. When submitting manufacturer's catalogs, pamphlets or other data sheets, in lieu of prepared shop drawings, specifically identify in ink the items for which approval is being sought.
- H. If the shop drawings contain any departures from the contract requirements, specifically describe them in Contractor's letter of transmittal. Where such departures require revisions to layouts or structural changes to the work as shown, Contractor shall, at his own expense, prepare and submit revised layout and structural drawings. Make drawings the same size as the Contract Drawings.

## **2.5 SAMPLES**

- A. Where required, submit sample or test specimens of materials to be used or offered for use. Samples shall be representative, in all respects, of the material offered or intended, shall be supplied in such quantities and sizes as may be required for proper examination and tests, and shall be delivered to Engineer, prepaid, along with identification as to their sources and types or grades. Submit samples well in advance of anticipated use to permit the making of tests or examinations.

- B. Samples will be checked with reasonable promptness only for conformance with the design and for compliance with the information given in the Contract Documents.
- C. The work shall be in accordance with the approved sample. The use of materials or equipment for which samples are required to be submitted for approval is not permitted until such approval has been given by Engineer.

**2.6 OPERATION AND MAINTENANCE DATA**

- A. Submit complete operation and maintenance manuals for valves, hydrants, pumps, motors, all power or electrically-driven equipment, and for other items for which routine operation and maintenance will be required.
- B. Suitably bind O&M Manuals and data sheets into volumes for specific systems, structures, and the like.
- C. Submit three copies of the bound and indexed O&M Manual Volume to the Owner, and one copy to the Engineer, prior to the 75% completion point of the work. Further, submit individual O&M Manuals and data sheets, as required, for sub-systems and portions of the work, along with other submittals and shop drawings relating thereto.
- D. Operation and maintenance manuals, shall include, as a minimum, installation, adjustment, operation and maintenance instructions, lubrication schedules, trouble shooting guides and the manufacturer's and service representative's name, address, and telephone number. Submit manuals in duplicate, before the equipment is delivered to the Project site.
- E. Complete and bind O&M Manual copies of the attached "Equipment Record Sheet" for each piece of equipment.

**2.7 TEST RESULTS AND INSTALLATION**

- A. Whenever tests are required on materials and equipment, such tests shall be performed and the test results submitted to Engineer. Do not deliver to the project or incorporate into the work any materials or equipment of which Engineer has not issued a written approval or acceptance of the required tests and test results.

END OF SECTION

## SECTION 01400 - QUALITY REQUIREMENTS

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
  - 1. Division 1 Section "Allowances" for testing and inspecting allowances.
  - 2. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
  - 3. Divisions 2 through 16 Sections for specific test and inspection requirements.

## 1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.

- C. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- E. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- I. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

#### 1.4 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

#### 1.5 SUBMITTALS

- A. Reports: Prepare and submit certified written reports that include the following:
  - 1. Date of issue.

2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Name and signature of laboratory inspector.

- B. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

## 1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
  3. Bacteriological or other testing for submittal to the New York State Department of Health shall be performed by a NYS certified laboratory.

- G. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

## 1.7 QUALITY CONTROL

- A. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency acceptable to the Owner to perform these quality-control services.
  2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
  6. Coordinate with Owner on testing responsibilities to ensure no duplication of tests are performed.
- B. **Manufacturer's Field Services:** Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."
- C. **Retesting/Reinspecting:** Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. **Testing Agency Responsibilities:** Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform any duties of Contractor.
- E. **Associated Services:** Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify



agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.
- F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 TEST AND INSPECTION LOG

- A. Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.
  2. Description of the Work tested or inspected.
  3. Date test or inspection results were transmitted to Engineer.
  4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.

### 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01400

## SECTION 01500 – TEMPORARY FACILITIES AND CONTROLS

## PART 1 - GENERAL

**1.1 DESCRIPTION**

- A. Work covered by this section includes the provision of temporary facilities for the execution of the work, for the protection of the work, for the protection of the health, safety, and well-being of persons at the site and the public in general, and for the protection of public and private properties.

**1.2 QUALITY PERFORMANCE**

- A. Comply with and perform all work in accordance with the requirements of local authorities and utility companies having jurisdiction and applicable codes, regulations, and ordinances. Secure approvals from local authorities and utility companies on all repairs, relocations, and connections, disconnects, and the work.

**1.3 CARE AND REPLACEMENT**

- A. Use all means to maintain temporary facilities and controls in proper and safe condition.
- B. In the event of loss or damage, immediately make all repairs and replacements.

**1.4 SUBMITTALS**

- A. Name and qualifications of person or persons who will be available to render first aid.
- B. Names, addresses, and telephone numbers of personnel who can be telephoned and act on behalf of Contractor in the event of emergencies or other problems requiring prompt attention during the winter shutdown, holidays, night, and other periods when Contractor's superintendent is absent from the project site.

## PART 2 - PRODUCTS AND MATERIALS

**2.1 GENERAL**

- A. Provide all products, utilities, and facilities as required to meet the condition of Paragraph 1.1.A. thereof.
- B. It is agreed that all temporary power lines, roadways, or other facilities which the Contractor furnishes, installs, maintains, and removed at the completion of the work, may be used during the period of construction by the Owner or any of its contractors at such reasonable time or times as may be directed by the Engineer. Likewise, it is provided that similar facilities of other contractors will become available to the Contractor hereunder, and under conditions as herein provided. The location of all temporary power lines, roadways, and other temporary facilities necessary shall be subject to the approval of the Engineer, and these shall be located and operated so as not to interfere with other work carried on by the Owner or by other contractors.

**2.2 ENCLOSURES**

- A. Provide and maintain safe and suitable temporary barricades, obstructions, warning signs, tarpaulins, and other temporary construction necessary for protection of the work and the safety of persons and property.

**2.3 BARRIERS**

- A. Provide barriers or fences to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage resulting from construction operations. Provide barricades or fences as required by governing authorities for safety on public rights-of-way.

**2.4 TRAFFIC REGULATIONS**

- A. The Contractor shall take special care to avoid damage to vehicles on the highways and to the facilities of the State of New York, County or Town/Village in which the work is being done.
- B. The Contractor shall give written notice to the State of New York, the appropriate County representative or Town/Village five (5) days before such work is to begin in their right-of-way.
- C. All maintenance and protection of traffic shall be performed as required by the NYSDOT in accordance with the Manual of Uniform Traffic Control Devices (latest edition).

PART 3 - EXECUTION

**3.1 INSTALLATION AND REMOVAL**

- A. Provide and maintain all temporary facilities and controls as long as necessary for the safe and proper completion of the work.
- B. Remove all temporary facilities and controls as rapidly as progress of the work permits or when directed by the Engineer.

END OF SECTION

## **TOL HUDSON RIVER PUMP STAION GENERATOR**

### **R21. 16218.00 PROTECTION OF EXISTING UTILITIES AND ADJACENT STRUCTURES 01530 - 1**

#### **SECTION 01530 – PROTECTION OF EXISTING UTILITIES AND ADJACENT STRUCTURES**

##### **PART 1 - GENERAL**

###### **1.1 GENERAL**

- A. Various underground and surface structures are shown on the Contract Drawings including water and gas pipes, sewers, electrical cables and conduits, drains, culverts, and miscellaneous structures. These structures are plotted on the Drawings from the best information available, but the locations and dimensions where shown do not purport to be absolutely correct, and the information given shall not be construed as representation that such structures will be found or encountered as plotted. Other structures or pipelines may also be encountered which are not shown on the Drawings.
- B. The Contractor shall be entirely responsible for all injuries to water pipes, electric conduits, or cables, drains, sewers, gas mains, poles, telephone and telegraph lines, streets, pavements, sidewalks, curbs and gutters, fences, culverts, building foundations, retaining walls or other structures of any kind met with during the progress of the work and shall be liable for damages to public or private property resulting therefrom.
- C. The cost of protection, replacement in their original positions and conditions or payment of damages for injuries thereto of pipelines and structures called for on the Drawings or specified shall be deemed included in the bid price, if no specific item is provided therefor, as part of the overhead cost of the work, and no additional payment will be made therefor. If the Contractor, through negligence, disturbs or injures existing gas, water, electric, or telephone facilities not required for the performance of the work, the facilities will be repaired by the utility companies at the sole expense of the Contractor. For relocation of any existing utility to facilitate construction, the Contractor will make his own arrangements with the utility companies.
- D. The Contractor shall, at all times in performance of the work, employ approved methods and exercise reasonable care and skill so as to avoid unnecessary delay, injury, damage, or destruction of utility installations and structures; and shall, at all times in the performance of the work, avoid unnecessary interference with or interruption of utility services and shall cooperate fully with the Owners thereof to that end.
- E. Service to fire hydrants shall not be disturbed at any time without permission of the chief of the fire department of the area.
- F. All costs for protection and maintenance of the services and utilities shall be included by the appropriate Contractor in the Contract Sum and no separate payment will be made therefor.
- G. Wherever the structures to be built under this Contract pass under or near other structures, the Contractor shall exercise the utmost care to protect such structures from damage.
- H. The Contractor shall be liable for all damages to any of the existing structures and shall save and keep the Owner and the Engineer harmless from any liability or expense for injuries, damages, or repairs to these structures.
- I. Existing utilities damaged during construction through negligence on the part of the Contractor shall be repaired by personnel of the utility companies involved at the expense of the Contractor.

###### **1.2 ADJACENT STRUCTURES**

- A. The Contractor's attention is directed to Part 1.1.A of this section relative to the information shown on the Drawings regarding the existing facilities and structures adjacent to the site.

**TOL HUDSON RIVER PUMP STAION GENERATOR**

**R21. 16218.00 PROTECTION OF EXISTING UTILITIES AND ADJACENT STRUCTURES 01530 - 2**

- B. One week's notice shall be given by the Contractor to all Village, Town, District, or County Departments, public service corporations and property owners whose pipes, poles, tracks, wires, or conduits or other structures may be affected by the work that they may protect, adjust, remove, or rebuild them or take such measures as they may desire to minimize inconvenience.
- C. The Contractor shall maintain in service all water, gas, and sewer main connections and shall provide temporary service where necessary.
- D. Any fence or part thereof that is damaged or removed during the course of the work shall be replaced or repaired by the Contractor and shall be left in a satisfactory condition as before the starting of the work. The manner in which the fence is repaired or replaced and the materials used in such work shall be subject to the approval of the Engineer. The cost of all labor, materials, equipment, and work for the replacement and repair of any fences shall be included in the contract price or if no specific item is provided therefor, as part of the overhead cost of the work, and no additional payment will be made therefor.
- E. The Contractor shall temporarily cover all catch basins when working in the vicinity to prevent excavated material and debris from falling into the catch basins. Temporary covers shall be removed during times of precipitation in order to maintain storm runoff. Any damaged laterals shall be replaced immediately so runoff conditions are not interrupted.

END OF SECTION

## SECTION 01540 – SECURITY AND PROTECTION

## PART 1 - GENERAL

**1.1 PROTECTION OF WORK AND PROPERTY**

- A. The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. He shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to all employees on the work who may be affected thereby, all the work and all the materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.
- B. Until such time as the work is completed and accepted by the Owner, Contractor shall assume all liability for damage to, or loss or destruction of the work or such materials, or equipment, and Contractor shall, at its expense, repair or replace to the Owner's satisfaction, all damage to, or loss or destruction of, the work or such materials or equipment which results from any cause whatsoever.
- C. The Contractor shall at all times consult with and obtain approval of the Owner or his representative for the storage of material, operation of equipment, placing of temporary structures or dispositions of any surplus or waste materials upon property of the Owner anywhere outside the limits of construction.
- D. Neither the materials excavated nor the materials or plants used in the construction of the work shall be so placed as to prevent free access to all fire hydrants, valves, or manholes.
- E. The Contractor shall so conduct the work that no equipment, material, or debris will be placed or allowed to fall upon private property in the vicinity of the work unless he shall have obtained the Owner's written consent thereto and shall have shown his written consent to the Engineer.

**1.2 PROTECTION OF GENERAL PUBLIC**

- A. The Contractor shall at all times conduct and work in such a manner as to cause the least inconvenience and greatest protection to the general public. The Contractor shall furnish and maintain barricades, warning signs, red flags, lights, and temporary passageways as may be necessary to protect the work and to safeguard the public. The cost of furnishing and maintaining the above facilities shall be incidental to the contract and no extra compensation for it will be allowed.
- B. Throughout the performance of the work or in connection with this contract, the Contractor shall construct and adequately maintain suitable and safe crossings over trenches and such detours as are necessary to care for public and private traffic. The material excavated from trenches shall be compactly deposited along the sides of the trench or elsewhere in such a manner as shall give as little inconvenience as possible to the traveling public, to adjoining property owners, to other Contractors, or to the Owner.
- C. The Contractor shall at all times so conduct the work that the abutters shall have reasonable access to their property.

**1.3 EMERGENCIES**

- A. In emergencies affecting the safety of persons or the work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization, from the Engineer or Owner, shall act to prevent threatened damage, injury, or loss.

**1.4 APPLICABLE LAWS AND REGULATIONS**

- A. The Contractor shall comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction. He shall erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety and protection. He shall notify owners of adjacent utilities when prosecution of the work may affect them. The Contractor shall remedy at his expense, all damage, injury, or loss to any property or person caused, directly or indirectly, in whole or in part, by the Contractor, any subcontractor, or anyone for whose acts any of them may be liable, except damage or loss attributable to the fault of the Contract Documents or to the act or omissions of the Owner or the Engineer or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the Contractor.
- B. The Contractor shall observe all rules and regulations of the health department having jurisdiction and shall take precautions to avoid creating unsanitary conditions.
- C. All workers shall have passed the OSHA 10 hour certification course as noted in the NYS Wage Rates. Cards shall be provided to the Engineer prior to starting work for all workers that will be on-site.

END OF SECTION



## SECTION 01731 - CUTTING AND PATCHING

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
  - 1. Divisions 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

## 1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation or performance of other Work.

## 1.4 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

### 3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete/Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01731

## SECTION 01770 - CLOSEOUT PROCEDURES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Warranties.
  - 3. Final cleaning.
- B. Related Sections include the following:
  - 1. Division 1 Section "Project Completion Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
  - 2. Division 1 Section "Photographs and Videos" for submitting Final Completion construction photographs and videos.
  - 3. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  - 4. Divisions 2 through 16 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

## 1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 5. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  - 6. Complete startup testing of systems.
  - 7. Submit test/adjust/balance records.

8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  9. Advise Owner of changeover in heat and other utilities.
  10. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  11. Complete final cleaning requirements, including touchup painting.
  12. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for Final Completion.

#### 1.4 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
  2. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
  5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs and photographic negatives, damage or settlement surveys, property surveys, and similar final record information.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

### 1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  - 2. Organize items applying to each space by major element
  - 3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Engineer.
    - d. Name of Contractor.
    - e. Page number.

### 1.6 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Contract Documents.
  - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
  - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION

## 3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    - g. Sweep concrete floors broom clean in unoccupied spaces.
    - h. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
    - i. Remove labels that are not permanent.
    - j. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
      - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
    - k. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
    - l. Replace parts subject to unusual operating conditions.
    - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
    - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

- o. Clean ducts, blowers, and coils if units were operated without filters during construction.
  - p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
  - q. Leave Project clean and ready for occupancy.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01770



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SECTION 01781 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
  - 1. Record Drawings.
  - 2. Record Product Data.
- B. Related Sections include the following:
  - 1. Division 1 Section "Closeout Procedures" for general closeout procedures.
  - 2. Divisions 2 through 16 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3 SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit one set(s) of marked-up Record Prints. Engineer will review whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Engineer will return unacceptable Record Prints to the Contractor for revision and resubmittal.
- B. Record Product Data: Submit one copy of each Product Data submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
  - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

- a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
  - b. Accurately record information in an understandable drawing technique.
  - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations below first floor.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Actual equipment locations.
    - h. Duct size and routing.
    - i. Locations of concealed internal utilities.
    - j. Changes made by Change Order or Construction Change Directive.
    - k. Changes made following Engineer's written orders.
    - l. Details not on the original Contract Drawings.
    - m. Field records for variable and concealed conditions.
    - n. Record information on the Work that is shown only schematically.
  3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Engineer.
    - e. Name of Contractor.

2.2 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  - 3. Note related Change Orders and Record Drawings where applicable.

2.3 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.

END OF SECTION 01781

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## SECTION 01782 - OPERATION AND MAINTENANCE DATA

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Operation manuals for systems, subsystems, and equipment.
  - 2. Maintenance manuals for the care and maintenance of products, materials, and finishes and systems and equipment.
- B. Related Sections include the following:
  - 1. Division 1 Section "Submittals" for submitting copies of submittals for operation and maintenance manuals.
  - 2. Division 1 Section "Closeout Procedures" for submitting operation and maintenance manuals.
  - 3. Division 1 Section "Project Record Documents" for preparing Record Drawings for operation and maintenance manuals.
  - 4. Divisions 2 through 16 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

## 1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

## 1.4 SUBMITTALS

- A. Initial Submittal: Submit 2 draft copies of each manual at least 15 days before requesting inspection for Substantial Completion. Include a complete operation and maintenance directory. Engineer will return one copy of draft and mark whether general scope and content of manual are acceptable.
- B. Final Submittal: Submit one copy of each manual in final form at least 15 Insert number days before final inspection. Engineer will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Engineer's comments. Submit 3 copies of each corrected manual within 15 days of receipt of Engineer's comments.

## 1.5 COORDINATION

- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

## PART 2 - PRODUCTS

### 2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Organization: Include a section in the directory for each of the following:
  1. List of documents.
  2. List of systems.
  3. List of equipment.
  4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

### 2.2 MANUALS, GENERAL

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
  1. Title page.
  2. Table of contents.
  3. Manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
  1. Subject matter included in manual.
  2. Name and address of Project.

3. Name and address of Owner.
  4. Date of submittal.
  5. Name, address, and telephone number of Contractor.
  6. Name and address of Engineer.
  7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Contract Documents:
1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
    - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
    - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
  2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
  3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
  4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
  5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
    - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.



## 2.3 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions.
  2. Operating standards.
  3. Operating procedures.
  4. Operating logs.
  5. Wiring diagrams.
  6. Control diagrams.
  7. Piped system diagrams.
  8. Precautions against improper use.
  9. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Product name and model number.
  2. Manufacturer's name.
  3. Equipment identification with serial number of each component.
  4. Equipment function.
  5. Operating characteristics.
  6. Limiting conditions.
  7. Performance curves.
  8. Engineering data and tests.
  9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
  2. Equipment or system break-in procedures.
  3. Routine and normal operating instructions.
  4. Regulation and control procedures.
  5. Instructions on stopping.
  6. Normal shutdown instructions.
  7. Seasonal and weekend operating instructions.
  8. Required sequences for electric or electronic systems.
  9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

## 2.4 PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
  - 1. Product name and model number.
  - 2. Manufacturer's name.
  - 3. Color, pattern, and texture.
  - 4. Material and chemical composition.
  - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
  - 1. Inspection procedures.
  - 2. Types of cleaning agents to be used and methods of cleaning.
  - 3. List of cleaning agents and methods of cleaning detrimental to product.
  - 4. Schedule for routine cleaning and maintenance.
  - 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
  - 1. Include procedures to follow and required notifications for warranty claims.

## 2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
  - 1. Standard printed maintenance instructions and bulletins.
  - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  - 3. Identification and nomenclature of parts and components.
  - 4. List of items recommended to be stocked as spare parts.

- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
  2. Troubleshooting guide.
  3. Precautions against improper maintenance.
  4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  5. Aligning, adjusting, and checking instructions.
  6. Demonstration and training videotape, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
  2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

### PART 3 - EXECUTION

#### 3.1 MANUAL PREPARATION

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
- C. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- D. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
1. Do not use original Project Record Documents as part of operation and maintenance manuals.
  2. Comply with requirements of newly prepared Record Drawings in Division 1 Section "Project Record Documents."
- E. Comply with Division 1 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01782

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## TECHNICAL SPECIFICATIONS

DIVISION 3 CONCRETE  
DIVISION 22 FACILITY GAS SERVICE  
DIVISION 26 ELECTRICAL  
DIVISION 31 SITE WORK

**SECTION 033000****CONCRETE****PART 1 - GENERAL****1.01 DESCRIPTION****A. Work Included**

1. All labor, materials, services and equipment necessary for furnishing and installing all cast-in-place concrete required for the completion of the work.

**B. Related Work Specified Elsewhere**

1. Structural Excavation, Backfill and Compaction.
2. Trenching, Backfilling and Compacting.
3. Concrete Formwork.
4. Concrete Reinforcement.
5. Joints for Concrete.

**1.02 SUBMITTALS**

- A. Test results for aggregates, water and field tests.
- B. Mill test certificates and test reports for cement indicating compliance with these specifications.
- C. Concrete mix designs for all classes and types of concrete to be used in the work.
- D. Proposed methods of concrete curing.
- E. Manufacturers' literature for admixtures, curing compounds, sealers, surface hardeners, etc.
- F. Name and location of concrete supplier.

**1.03 REFERENCES**

- A. American Concrete Institute (ACI). The following codes, standards and recommendations are intended to specify minimum standards of performance:
  1. ACI 211.1 Standard Practice for Selecting Proportions for

- 
- Normal, Heavyweight and Mass Concrete
- Buildings
2. ACI 214 Recommended Practice for Evaluation of Strength Test Results of Concrete
  3. ACI 301 Specifications for Structural Concrete for
  4. ACI 302 Guide for Concrete Floor and Slab Construction
  5. ACI 304 Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
  6. ACI 305 Hot Weather Concreting
  7. ACI 306 Cold Weather Concreting
  8. ACI 309 Standard Practice for Consolidation of Concrete
  9. ACI 350 Concrete Sanitary Engineering Structures
- B. American Society for Testing and Materials (ASTM). The following ASTM specifications are referred to in these specifications and are to be considered a part of these specifications:
1. C31 Standard Method of Making and Curing Concrete Test Specimens in the Field
  2. C33 Standard Specification for Concrete Aggregates
  3. C39 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
  4. C94 Standard Specification for Ready-Mixed Concrete
  5. C143 Standard Test Method for Slump of Portland Cement Concrete
  6. C150 Standard Specification for Portland Cement
  7. C171 Specification for Sheet Materials for Curing Concrete
  8. C173 Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method



- |     |      |  |
|-----|------|--|
| 9.  | C231 | Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method |
| 10. | C260 | Standard Specification for Air-Entraining Admixtures for Concrete            |
| 11. | C494 | Standard Specification for Chemical Admixtures for Concrete                  |

#### 1.04 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301 Specification of Structural Concrete for Buildings.
- B. American Association of State Highway and Transportation Officials (AASHTO).
- C. Standard specifications, New York State Department of Transportation (NYSDOT).
- D. In each case the latest revision shall apply.

#### 1.05 SOURCE QUALITY CONTROL

- A. Portland Cement - Mill test certificates identifying chemical and physical analysis.
- B. Aggregates - Perform tests by an approved independent testing laboratory, prior to use, to show compliance with these specifications:
  - 1. Such tests which have been made within six months prior to the use of the aggregates will be acceptable.
  - 2. Gradation tests shall be performed at the point of use.
  - 3. The source of the material shall not be changed without retesting.
  - 4. All aggregates shall be tested for compliance with the specifications at a minimum of one year intervals during the course of the work.
  - 5. Coarse aggregates shall be obtained from a NYSDOT approved operating source.

## 1.06 TESTS AND INSPECTIONS

- A. All required field and laboratory tests shall be at the Contractor's expense. Should any additional tests be necessary due to inadequate test results (i.e., core testing, load testing, etc.), the Contractor shall also be responsible for the cost. The contractor shall use only an approved commercial testing laboratory.
- B. The Contractor shall provide facilities necessary to obtain and handle representative samples of materials to be tested and shall furnish all necessary cooperation and assistance as requested by the Engineer. The Contractor shall provide sufficient notification to the testing laboratory and shall plan and schedule his operations to allow adequate time for all required testing and inspection.
- C. The testing laboratory shall be responsible to the Engineer for the field control of all concrete and may reject batches for high slump, uncontrolled air entrainment or delays. Written reports shall be issued immediately after the testing is complete. However, if at any time the results are questionable, the Engineer shall be notified immediately so that corrective steps may be taken. All tests and reports submitted for review shall be only for those specific items used in the work. One copy of the test reports shall be submitted directly to the Engineer by the testing laboratory for review.
- D. The criteria for the acceptance of concrete shall be as detailed in ACI 318, Chapter 4, and include the following tests:
  - 1. Concrete Test Cylinders
    - a. During the progress of the work, a set of six 6" x 12" cylinders shall be made for each 50 cubic yards of concrete placed, or fraction thereof, of each class of concrete placed each day. These cylinders shall be made up and cured in accordance with ASTM C31 and shall be tested in accordance with ASTM C39. The following schedule shall be used in the testing procedure:
      - i. Two shall be tested at seven days.
      - ii. Two shall be tested at twenty-eight days.
      - iii. The remaining two shall be tested at forty days or as directed by the Engineer.
    - b. The making, pick-up and curing of the cylinders shall be the responsibility of the testing laboratory, but the Contractor shall cooperate in protecting the cylinders and in notifying the testing lab of scheduled pours.
    - c. The report shall indicate the mix proportions, air content, water

- content, slump, batching time, placing time and a detailed description where the tested concrete was placed in the structure. All items shall be completely filled in on each test report.
2. Slump Tests
    - a. Slump tests shall be made of each batch and/or as frequently as directed. Tests shall be made in accordance with the requirements of ASTM C143.
  3. Air Content Tests
    - a. Air content tests shall be made each time slump tests are taken of concrete required to be air entrained. Tests shall be made in accordance with ASTM C173 (Volumetric Method) or ASTM C231 (Pressure Method).
  4. Portland Cement
    - a. Cement stored at the job site or in storage at the concrete suppliers plant for over 60 days shall be subjected to complete tests to determine compliance with ASTM C150.
  5. Fine Aggregate
    - a. Tests shall be performed as outlined in the ASTM Specification C33, "Methods of Sampling and Testing". Soundness of the aggregate shall conform to the following:
      - i. Sodium Sulfate: Maximum 7 percent loss
      - ii. Magnesium Sulfate: Maximum 15 percent loss
    - b. Organic impurities shall not be allowed. Sand exhibiting a color darker than the referenced color shall be rejected.
  6. Coarse Aggregate
    - a. Tests shall be in accordance with ASTM C33 and as required by NYSDOT Specification 703.02.
  7. Water
    - a. Questionable sources of water, as determined by the Engineer, shall be tested in accordance with AASHTO T26 and ACI 301.

## **PART 2 - PRODUCTS**

### **2.01 CONCRETE MATERIALS**

#### **A. Cement**

1. Conform to ASTM C150 Type II.
2. Tricalcium aluminate ( $C_3A$ ) shall be limited to a maximum of 7 percent. Use only approved brands without change for the entire project.
3. Cement used throughout the entire project shall be uniform in color so as not to detract from the appearance of the exposed concrete.

B. Fine Aggregates

1. Natural sand in conformance with ASTM C33.

C. Coarse Aggregates

1. Crushed gravel or crushed stone meeting the requirements of ASTM C33 and NYSDOT specification 703.02. Gradation shall conform to the Table 703-4 of the NYSDOT specification with the maximum size aggregate for various types of work as follows:
2. Floor Toppings
  - a. For bond beam fill, use No. 1A size with not more than 10 percent passing a #4 sieve.
3. Use No. 1 size for:
  - a. slabs less than 7 inches in depth;
  - b. beams, girders and columns less than 12 inches in width; and
  - c. concrete piles and other structural concrete where restrictions within concrete are 2 inches or less.
4. General work having a cross-sectional dimension of 12 inches or greater, use a mixture of No. 1 size and No. 2 size conforming to the following gradation:

<u>Primary Size</u>	<u>Percent Passing</u>
12"	100
1"	90-100
¾"	60-90
2"	22-50
3"	0-6

D. Water

1. Mixing water shall be clear and free from deleterious amounts of oil, acid, alkali, organic matter, and other substances. Water from an unpotable water source must be approved by the Engineer prior to use.

E. Fly Ash (Pozzolans): ASTM C 618, including Table 1A (except for footnote A), Class F except that loss on ignition shall not exceed 5.0 percent.

F. Monofilament Fibrous Concrete Reinforcement: ASTM C 1116 and ASTM C 1018, 100 percent virgin, homopolymer polypropylene fibers specifically manufactured for use as concrete reinforcement.

1. Monfilament Fiber.
2. Fiber Length: 1/2 or 3/4 inch.
3. Specific Gravity: 0.9.

## 2.02 ADMIXTURES

A. Calcium chloride or admixtures containing more than .1 percent chloride ions are not permitted. Written conformance of the chloride ion content will be required from the admixture manufacturer prior to mix design review.

1. Water Reducing Admixture
  - a. The admixture shall conform to ASTM C494, Type A, and shall not contain more chloride ions than are present in municipal drinking water. The following are approved:
    - i. "EUCON WR-75" by the Euclid Chemical Company
    - ii. "Pozzolith 200N" by Master Builders
    - iii. "Plastocrete 160" by the Sika Chemical Company
2. High Range Water Reducing Admixture (Superplasticizer)
  - a. The admixture shall conform to ASTM C494, Type F or G and shall not contain more chloride ions than are present in municipal drinking water. The following are approved:
    - i. "EUCON 37" by the Euclid Chemical Company
    - ii. "Sikament" by the Sika Chemical Company
3. Retarding Water Reducing Admixture
  - a. The admixture shall conform to ASTM C494, Type D, and shall not contain more chloride ions than are present in municipal drinking water. The following are approved:
    - i. "EUCON Retarder 75" by the Euclid Chemical Company
    - ii. "Datatard HC" by W.R. Grace
    - iii. "Plastiment" by the Sika Chemical Company
4. Non-chloride Accelerator
  - a. The admixture shall conform to ASTM C494, Type C or E, and shall not contain more chloride ions than are present in the municipal drinking water. The following are approved:
    - i. "Accelguard 80" by the Euclid Chemical Company
    - ii. "Darex Set Accelerator" by W.R. Grace
5. Air Entraining Admixture
  - a. The admixture shall conform to ASTM C260. The following are approved:
    - i. "Air Mix" by the Euclid Chemical Company

- ii. "Darex-AEA" by W.R. Grace
  - iii. "MBVR" by Master Builders
6. Bonding Admixture
- a. The admixture shall be for use with the bonding grout or patching mortar. The following are approved:
    - i. "SBR LATEX" by the Euclid Chemical Company
    - ii. "ACRYL-60" by Standard Drywall Products, Inc.

## 2.03 CURING AND SEALING MATERIALS

### A. Curing and Sealing Compounds

- 1. The compounds shall conform to federal specification TT-C-800A and shall have a 30 percent minimum solids content.
- 2. The compound shall be of the styrene butadiene type.
- 3. Test data from an independent laboratory shall be submitted indicating a maximum moisture loss of .03 grams per square centimeter when applied at a coverage rate of 300 square feet per gallon.
- 4. Manufacturer's certification is required for approval.
- 5. The following are approved:
  - a. "Super Floor Coat" or "Super Plicoure" by the Euclid Chemical Company
  - b. "Master Seal" or "Master Seal 66" by Master Builders

### B. Waterproofing Paper

- 1. The curing paper shall conform to ASTM C171.

## 2.04 ACCESSORIES

### A. Bonding Compound

- 1. The compound shall be of the polyvinyl acetate, rewettable type. The following are approved:
  - a. "Euco Weld" by the Euclid Chemical Company
  - b. "Sikadur Hi-Mod" by the Sika Chemical Company

### B. Embedded Items

- 1. Dovetail Anchor Slots shall be 24 gauge galvanized with removable filler. The following are approved:
  - a. #305 by Hohmann & Barnard
  - b. #100 by Cleveland Steel Specialty Company
  - c. "Bee-Hive" by Gateway Erectors, Inc.
  - d. Or Equal

### C. Miscellaneous Items:

1. Mastic Material
  - a. For use in leveling concrete slabs. Mastic material shall be of the latex type. The following are approved:
    - i. "S-180 Underlayment Cement" by Armstrong Cork Company
    - ii. "Levelite-Latex" by Selby-Battersby & Company
    - iii. Or Equal
  - b. Depressions between high spots of the concrete slab shall not be greater than  $\frac{3}{16}$ -inch under a 10 foot straight edge nor more than  $\frac{1}{16}$ -inch within any 1 foot distance.
  - c. All variations above this tolerance shall not receive leveling cement but shall be ground level.
2. Compression Seals
  - a. Compression seals shall be of neoprene conforming to ASTM D2628.
  - b. The seals shall be furnished in continuous lengths and installed according to manufacturer's recommendations.
  - c. At the time of installation, the seal shall be compressed to 65 percent of its original width.
3. Neoprene Bearing Pads
  - a. Pads shall conform to the provisions of AASHTO standard specifications for highway bridges. The following elastomeric bearing pad manufacturers are approved:
    - i. W.R. Grace & Company
    - ii. Kirkhill Rubber Company
    - iii. Or Equal

## 2.05 CONCRETE MIX DESIGN

- A. All mix designs shall be proportioned in accordance with Section 4.3 (Field Experience) or Section 4.4 (Trial Batches) of ACI 318-83. If trial batches are used, they shall be established by an approved commercial testing laboratory employed by the Contractor.
- B. The proposed mix design shall be designed to achieve an average strength 1200 psi higher than the specified strength listed in the concrete class table below.
- C. Mix design submittals shall indicate the amounts of all ingredients including cement, admixtures and the weight of the aggregates stated in a saturated surface dry condition.
- D. The various classes of concrete shall be designated as follows:

Maximum Water to Cement Ratio (W/C)

<u>Class</u>	<u>28 Day Compressive Strength</u>	<u>By Weight</u>	
		<u>Non-Air Entrained</u>	<u>Air Entrained</u>
A	5000 psi	.45	.35
B	4000 psi	.55	.45
C	3000 psi	.68	.58
D	2500 psi	.74	.64
E	2000 psi	----	----

- E. In addition to the requirements above, these specific requirements shall be considered in the mix design:
1. Concrete required to be watertight or concrete exposed to de-icers shall have a maximum water to cement ratio (W/C) of .45.
  2. All concrete slabs less than 8 inches in thickness, when placed in temperatures below 50°F, shall contain the specified non-chloride accelerator.
  3. All concrete shall contain an approved water reducing admixture or an approved high range water reducing admixture (superplasticizer).
  4. All pumped concrete, watertight concrete and concrete with a water to cement ratio below .50 shall contain the high range water reducing admixture.
  5. Cement contents shall be chosen to provide the minimum strengths for each class as shown in the Concrete Class Table above. The amount of cement content, however, shall not be less than the following:
    - a. Class "B" - 550 pounds per cubic yard
    - b. Class "C" - 470 pounds per cubic yard
    - c. Class "B" Toppings - 600 pounds per cubic yard
  6. Unless otherwise specified, all concrete shall be Class "B" watertight.
  7. All concrete exposed to weather, or water, or subject to freezing shall be air-entrained with an approved entraining admixture.
  8. Fly ash may be substituted for (Portland) cement in normal weight concrete up to a maximum of 15 percent by weight of the required minimum (Portland) cement. If fly ash is incorporated in a concrete design mix, make necessary adjustments to the design mix to compensate for the use of fly ash as a partial replacement for (Portland) cement.



- a. Adjustments shall include the required increase in air-entraining admixture to provide the specified air content.
  - b. Lower early strength of the concrete shall be considered in deciding when to remove formwork.
9. Amount of Fibers: One to 1.5 pounds of fibrous concrete reinforcement per cubic yard of concrete as recommended by the approved fiber manufacturer.

F. Slump

- 1. All concrete containing the high range water reducing admixture (superplasticizer) shall have a maximum slump of 8 inches unless otherwise directed by the Engineer. Prior to the addition of the superplasticizer, the concrete shall be tested at the job site and a slump of 2 inches to 3 inches shall be verified. The plasticizer may then be added to increase the slump to the approved level.
- 2. All concrete not containing a high range water reducing admixture (superplasticizer) shall conform to these maximum slump values:

Reinforced concrete-general	4"
Non-reinforced concrete	3"
Pavements, sidewalks	3"
Heavy mass concrete	3"
Slabs on grade	3"
Floor toppings	2"

These values listed are specified as the "working limit." The average slump values shall be less than the "working limit."

- 3. Tolerances shall be as per ASTM C94 except that the plus tolerance shall be limited to the "working limit." A deviation of 1 inch shall be allowed for such occasional batches of concrete that may inadvertently exceed the "working limit." Batches of concrete with slumps exceeding the "working limit" will be rejected if the Contractor fails to comply promptly with the Engineers' instructions to reduce the slump of the concrete within the "working limit." The Contractor shall not increase mixing time, add dry materials or otherwise modify a rejected batch for the purpose of conforming to slump limits.
- 4. Concrete that has been rejected for failure to meet the slump limits shall not be salvaged for use in the work.
- 5. Concrete containing the high range water reducing admixture (superplasticizer) may be given additional superplasticizer only when approved by the Engineer. If a time delay has occurred wherein the slump has decreased to a level that is significantly below the maximum approved level, additional admixture may be added to increase the slump to the maximum level.

### G. Air Content

1. Air content for air entrained concrete shall be controlled within the following limits:

General Work	4% to 7%
Concrete exposed to frost	4.5% to 7.5%
Concrete exposed to salt	4.5% to 7.5%
Concrete with maximum 3/4-inch aggregate	4.5% to 7.5%
Finished trowel surfaces	3%
Mats	3%
Footings	3%
Substructure slab	3%

### H. Rate of Hardening

1. Concrete mixes shall be designed to produce the following rates of hardening:

- a. General concrete with the following ambient temperatures:

501-851F - normal rate of hardening

801F - retarded rate of hardening

501F - accelerated rate of hardening

- b. Mass concreting with the following ambient temperature:

401F - retarded rate of hardening

2. Should the Contractor feel it advantageous to use modified rates of hardening to improve workmanship or facilitate his work, consideration will be given by the Engineer.

### I. Mixing Water Control

1. The quantity of mixing water used in the concrete mix shall be determined by the Contractor with the amount used conforming to the various limits on specified slump. However, if the slump of the concrete should exceed the maximum specified slump, the Engineer will direct the Contractor to reduce the quantity of mixing water. Concrete consistency shall be uniform from batch to batch.
2. If deemed necessary by the Engineer during the course of the work, moisture

determinations of the aggregates shall be made and aggregate weights and water requirements adjusted accordingly.

3. When concrete is transported in units approved for mixing, the addition of not more than 10 percent of the total design water will be permitted at the job site to obtain the specified initial slump.
  - a. Any addition of water shall be followed by at least 30 revolutions in the mixing speed range.
  - b. Not more than two additions of water will be allowed at the point of deposition before discharge.
  - c. No retempering, defined as the addition of water after the mix has obtained its specified initial set, will be permitted.

#### J. Batching and Mixing

1. Batching
  - a. The Contractor shall have at his disposal a modern and dependable batch plant within a reasonable distance from the work.
  - b. The batch plant shall conform to the requirements of the NYSDOT specifications for automatic proportioning equipment as specified herein, and shall be approved by the State of New York.
  - c. The batching and mixing shall conform to ACI 304 and to the NYSDOT specification 501-3.03.
  - d. The batching shall be done only with materials previously approved by the Engineer.
2. Mixing Transporting and Discharging
  - a. Conform to ASTM C94 and to the NYSDOT specification 501-0.04.
  - b. Wastewater must be discharged and not used as mixing water for the next batch.
  - c. Maximum interval between successive truckloads of concrete discharged into the work shall not exceed 30 minutes when the portion of the work being placed requires more than one load of concrete.

#### 2.06 MORTAR FILL

- A. Mortar fill to form fillets, channel bottom and swept-in grout, where shown on the contract drawings, shall be made with the following proportions:

Sand	1 part
Cement	22 parts
Water	minimum required for workability

## **PART 3 - EXECUTION**

### **3.01 PLACING CONCRETE**

- A. Concrete shall be placed in conformance to ACI 304 and with these specifications.
- B. Prior to placing concrete:
  - 1. All form work, embedded parts, reinforcements, foundation surfaces and joints involved in the work must be inspected by the Engineer.
  - 2. All surfaces that will be in contact with the poured concrete shall be free from standing water, mud, debris, frost, snow and ice.
  - 3. Earth surfaces which are absorptive shall be moistened to a depth of 1 inch.
  - 4. When the ambient temperature is above 40°F, all subgrade surfaces shall be wetted down with cool water just prior to placement.
  - 5. All reinforcing bars and embedded parts shall be cleaned of any coating of oil, grease, ice, dried mortar or any other foreign matter that will prevent bond with the concrete.
  - 6. Preparation of joints shall be specified under the section entitled Joints for Concrete.
  - 7. The Contractor shall build into the concrete such items as reinforcing steel, inserts, sleeves, watertops, etc., as shown on the contract drawings or as specified.
    - a. All embedded items shall be accurately located and securely fastened in place to prevent displacement during the placement of the concrete.
    - b. The Contractor shall cooperate with all other trades in permitting ample time for the placement of all necessary sleeves, inserts, conduits, hangers, etc. required for their trades.
    - c. If in the judgment of the Engineer, the embedded items are placed in such a manner to reduce the structural adequacy of the structure, the Contractor shall take the necessary corrective steps.
  - 8. All anchor bolts for structural steel and mechanical equipment shall be carefully set as shown on the contract drawings and as shown on the fabricator's and manufacturer's reviewed anchor bolt setting plans.
- C. Placement of Concrete
  - 1. Concrete shall be conveyed by means that will prevent segregation and loss of mortar from the mix.
  - 2. Adequate manpower and equipment in the form of buckets, buggies, chutes, conveyors, or other approved means shall be provided and properly maintained by the Contractor to ensure continuous operations.

3. Care shall be taken that no equipment with aluminum parts comes in contact with the fresh concrete.
4. Deposit concrete vertically, using chutes, elephant trunks or other suitable devices to limit free fall to 5 feet.
5. Place formed concrete in continuous horizontal layers not more than 18 inches thick. When the time between successive layers exceeds one hour, the specified water reducing, retarding admixture, Type "D", will be required to delay initial set so that proper consolidation of lifts can occur and cold joints are avoided.
6. When a column-slab combination or a wall-slab combination pour is scheduled, the column or wall shall have taken its initial set before concreting is continued on the slab. Beams, girders, brackets, column capitals and haunches shall be considered as part of the floor system and shall be placed integrally therewith.
7. Following a discontinuance or interruption in the placement of the concrete, all accumulations of mortar splashed upon the reinforcing steel and the surfaces of the forms shall be removed.
8. Dried mortar chips and dust shall not be puddled into the plastic concrete.
9. The forms or formwork shall not be jarred or the exposed reinforcement disturbed in any manner after the concrete has taken its initial set.

#### D. Pneumatic Placement

1. Pneumatic placement of concrete will be permitted only if authorized by the Engineer, in writing.
2. The equipment shall be suitable in kind and adequate in capacity for the work.
3. The equipment shall be operated and placed so that no vibrations result which may damage freshly placed concrete.
4. The machine shall be located as close as practicable to the place of deposit.
5. The position of the discharge end of the line shall not be more than 8 feet from the point of deposit.
6. The discharge lines shall be horizontal or inclined upward from the machine.
7. At the conclusion of placement, the entire equipment shall be thoroughly cleaned.

#### E. Pumping

1. Pump placement of concrete will be permitted only if authorized by the Engineer, in writing.
2. The equipment shall be suitable in kind and adequate in capacity for the work.
3. The operation of the pump shall be such that a continuous stream of concrete, without air pockets, is produced.

4. When pumping is completed, the concrete remaining in the pipeline, if it is to be used, shall be ejected in such a manner that will not produce contamination of the concrete or separation of the concrete ingredients.
5. Prior to starting the pumping operations, the equipment and pipeline shall be thoroughly lubricated with a cement slurry in a manner approved by the Engineer.
6. After the pumping operation has been completed, the entire equipment shall be thoroughly cleaned.

#### F. Depositing Concrete Under Water or Flooding of Concrete

1. No concrete shall be deposited under water without the written permission of the Engineer and then only in accordance with the engineers' directions. Proper tremie equipment and techniques must be used, should the need for placement under water arise.
2. No water except curing water shall be allowed to come in contact with the concrete or masonry surface for a minimum of 24 hours.
  - a. Should unavoidable rising water put a stress on the concrete, adequate bracing must be provided.
  - b. Loading of flooded concrete shall not occur without the approval of the Engineer. Safety precautions shall be the responsibility of the Contractor.

#### G. Interruption of Concreting

1. Should the placement of concrete be suspended or unavoidably interrupted, keyways and bulkheads shall be provided and steps taken to prevent feather edging when work is eventually resumed. Horizontal surfaces shall be roughened for bond. Joint preparation and bonding shall be in compliance with the section entitled Joints for Concrete.

#### H. Consolidation of Concrete:

1. Concrete shall be consolidated during and immediately after depositing. The consolidation shall be in conformance with ACI 309 in all respects and shall be accomplished by mechanical vibration subject to the following conditions:
  - a. The vibration shall be internal, unless special authorization is given by the Engineer for external vibration.
  - b. Vibrators shall be capable of transmitting vibration to the concrete at frequencies recommended by ACI 309, "Recommended Practice for Consolidation of Concrete".
  - c. The intensity of the vibration shall be such as to visibly affect the mass of concrete by a slump of 1 inch over a radius of 18 inches.
  - d. The Contractor shall supply a sufficient number of vibrators to properly

consolidate each pour immediately after it is placed. Standby vibrators in good condition shall be readily available, if needed, during concrete placement.

- e. Vibrators shall not be applied directly to the reinforcement or to the forms. They shall not be used to make the concrete flow in the forms over distances so great as to cause segregation.
2. Vibration shall be supplemented by spading as necessary to ensure smooth surfaces and well consolidated concrete. Form surfaces and corner locations that are difficult to consolidate with vibrators shall be consolidated by spading.

### 3.02 COLD WEATHER CONCRETING

- A. Adequate equipment shall be provided for heating the concrete materials and protecting the concrete during freezing or near freezing weather.
- B. No frozen materials nor materials containing ice shall be used.
- C. All concreting operations in cold weather, when temperatures are at, or expected to be below 401F, shall conform to ACI 306.
  - 1. Special attention is drawn to the minimum required placing and curing temperatures.
- D. Only the specified non-chloride accelerator may be used. Calcium chloride or admixtures containing more than .1 percent chloride ions are not permitted.
- E. Concrete damaged by freezing shall be removed and replaced at the Contractor's expense.

### 3.03 HOT WEATHER CONCRETING

- A. Care shall be taken to protect the concrete or to schedule operations to avoid problems with flash set or conditions that produce excessively rapid drying.
- B. All concrete operations during hot weather shall conform to the requirements of ACI 305.
- C. During hot weather, consideration shall be given to maintaining the temperature of the cement, aggregates and mixing water, such that the temperature of the concrete at the time of delivery to the job site in no case exceeds 901F.
- D. When the temperature of the concrete exceeds 801F, the water reducing, retarding admixture, Type "D", may be required.

### 3.04 PLACING MORTAR FILL

- A. Prior to placing mortar fill, the concrete surface shall be thoroughly cleaned to remove all laitance, oil, grease, and other foreign matter that would prevent bonding.
- B. Immediately following the placement of the mortar fill, a slurry coat shall be rubbed into the concrete surface.
- C. The specified curing and sealing materials must be used for complete curing of the mortar fill.

### 3.05 EQUIPMENT BASES

- A. Unless otherwise shown, equipment bases shall be constructed of Class "B" concrete. Size and location shall be coordinated with the manufacturer's equipment drawings.
- B. All bases or pads shall be reinforced with a minimum of #4 at 12 inches on center, or as detailed on the contract drawings. The reinforcing shall be dowelled into the base or slab with #4 bars.
- C. The concrete slab or base shall be roughened and the specified bonding compound applied.
- D. The concrete shall be placed to the required profile and all exposed surfaces shall be finished as specified for the adjacent floor finishes. All edges shall be chamfered and tooled.

### 3.06 CONCRETE TOPPING

- A. Concrete topping shall be provided where shown on the contract drawings. The thickness of the toppings shall be as shown on the drawings, but in no case shall they be less than 2 inches.
- B. Unless otherwise noted, concrete for toppings shall be Class "B" concrete.
- C. Subsequent to float finishing the concrete substrate, the Contractor shall prepare the surface to receive the topping by employing one of the following two alternate methods:
  - 1.a. Within six to twelve hours after the float finishing is completed, all loose mortar, scum, laitance, etc., shall be removed by wire brushes or other suitable means to expose the coarse aggregate.



- 1.b. Care shall be exercised that the aggregate in the hardened concrete is not disturbed. Any aggregate that is disturbed shall be removed.
  - 1.c. The concrete substrate shall then be cured as specified herein and shall be protected until placement of the topping is completed.
  - 2.a. Anytime after the concrete substrate has hardened, the entire surface shall be scarified to expose a clean surface of sound concrete.
  - 2.b. Leave the surface rough to a depth of 1/8-inch.
- D. Prior to placing the concrete for the topping, the hardened concrete surface shall be thoroughly cleaned and moistened. However, the surface shall be free from excessive surface water.
- E. Apply bonding compound to the prepared and cleaned surface per the manufacturer's recommendations:
1. The Contractor shall have the option of using a bonding grout composed of:

Cement	One Part
Sand	One Part (100% passing No. 30 sieve)
Bonding Admixture	per manufacturer's direction
Water	(Maximum Slump of 6 inches)
- The bonding grout shall be brushed into the existing surface of the concrete. The topping must then be placed while the bonding grout is still tacky.
- F. Reinforcing for concrete toppings, when called for, shall be WWF 6x6 - W2.9 x W2.9 supplied in flat sheets, and shall be pressed into the wet concrete as the concrete is placed. The clear distance from the surface of the topping to the fabric shall be 1 inch.
- G. The concrete topping shall be cured by application of the specified curing and sealing materials. The curing must start immediately after the final finishing is complete.
- H. Joints shall be saw-cut in the topping and sealed as shown on the contract drawings.
- I. The concrete topping shall receive finish specified for floors and slabs.

### 3.07 FINISHING

## A. Floors and Slabs

1. Exposed Concrete Finish
  - a. Strike off to correct elevation immediately after placing concrete.
  - b. Bull float after screeding.
  - c. When the concrete will sustain foot pressure and all bleed water and surface sheen has evaporated from the surface, begin power float operation. The surface shall be floated at least twice, to uniform, sandy texture. Hand float inaccessible areas.
  - d. Immediately following the power float operation, power trowel the surface at least twice, to a smooth, hard finish. Hand trowel inaccessible areas. Trowelled finish slabs shall be level so that depressions between high spots do not exceed  $\frac{1}{8}$ -inch under a 10 foot straight edge.
  - e. Final trowelling shall be done so that a ringing sound is produced as the trowel is drawn over the surface. The finished surface shall be free of all trowel marks.
  - f. Apply the specified curing and sealing compounds to all exposed concrete finished floors and to the bottom of all concrete channels immediately following final finishing operations. Application of curing and sealing compounds shall be in two coats per manufacturer's recommendations. The sealing coat shall be applied just prior to the completion of construction.
2. Tank Base Slabs
  - a. Tank base slabs which do not receive subsequent toppings or swept in-grout are to have a power trowelled finish as outlined in 1. a., b., c. and d. above.
  - b. Commence curing immediately after power trowelling.
3. Culvert inverts, manhole bottoms, catch basins and other exterior concrete not intended for occupancy.
  - a. Magnesium Float Finish.

## B. Formed Surfaces

1. Special care shall be taken during the forming for concrete and the concrete placement such that the amount of work required under this section is reduced to a minimum.
2. If, upon removal of the formwork, any voids or honeycombs are found, such faults shall be corrected immediately at the Contractor's expense by implementing the following:
  - a. Cut away the unsound area to a minimum depth of 1 inch and refill with mortar mixed with the same brand of cement and same proportions as the original placement.
  - b. Edges of the patch shall be square with the face with feather-edging prohibited.

- c. Dampen the area to be patched and then apply the specified bonding agent per manufacturer's recommendations.
- d. Fill the hole with mortar with a 2-inch layer after the bonding compound has dried. Succeeding 2-inch layers will be placed after the first layer has taken initial setting.
- e. If, in the opinion of the Engineer, improper consolidation is too extensive, or if the structure appears weakened by the voids, complete removal of the concrete in question may be required.
- f. Patches must be kept moist for a minimum of three days.

3. Rubbed Finishes

- a. The type of finish to be used shall be as scheduled or as noted on the contract drawings. Where the type of finish is not shown or scheduled, exposed faces shall be given a Type "B" finish and unexposed faces shall be given a Type "C" finish. Where concrete is to receive paint or a glazed wall finish, a Type "B" finish shall be used. The finishes are designated as follows:

Type "A": Surfaces shall be rubbed until all marks are obliterated and a uniformly smooth finish is obtained.

Type "B": Surfaces shall be rubbed until they are uniformly smooth, but complete obliteration of all marks is not required.

Type "C": All fins, burrs, and projections shall be removed. Any honeycomb or tie-holes shall be filled and patched.

1. Begin rubbing within four hours of the removal of the formwork and expedite to completion as rapidly as practicable.
2. Rub surfaces with carborundum and water until all fins, bubbles, hollows and other defects are removed.
3. Do not use grout or mortar in the rubbing process. Plastering of surfaces will not be allowed.
4. Use power tools with hand work limited to inaccessible corners or small areas.
5. After the rubbing is completed and the surface has dried, rub the surface with burlap to remove all loose powder.
6. All expansion joints in the completed work shall be left carefully tooled and free of all mortar and concrete.

### 3.08 CURING

- A. Maintain all concrete in a moist condition for the duration of the specified curing using the methods that will ensure complete and continuous saturation. Use of water sprays is acceptable provided care is exercised to ensure continuous moist curing. Alternate wetting and drying is prohibited. The curing schedule is as follows:

1. Interior floor slabs with resilient tile, carpet or exposed surface:
    - a. Cure with specified curing and sealing compounds.
  2. Exterior slabs, sidewalks, curbs, etc.:
    - a. Cure with specified curing and sealing compounds.
  3. Remaining Floor Slabs and Tank Base Slabs
    - a. Cure with curing paper conforming to ASTM C171 with minimum 10 mil polyethylene sheets. Lap all edges a minimum of 6 inches. All joints shall be continuously taped. If any tearing or ripping of the sheets during subsequent operations on the slab occur within the specified curing period, repair by taping or replacement will be required. Add water as required periodically or as ordered by the Engineer.
  4. Vertical Surfaces
    - a. Forms shall remain in place or the exposed concrete shall be covered with wet burlap during the curing period.
      1. The forms or burlap surfaces shall be kept continuously saturated throughout the curing period.
- B. Where specifically approved by the Engineer, in writing, the specified curing and sealing compounds may be used on other surfaces provided discoloration does not occur and the application is in accordance with the manufacturer's recommendations. Written certification of compatibility with subsequent finishes must be supplied by the finish manufacturer. In general, do not use curing and sealing compounds on the following surfaces:
1. Any surface against which additional concrete or other cementitious finishing materials are to be bonded.
  2. Any surface in which a waterproofing membrane is to be applied.
- C. During the curing period, exercise care to prevent excessive vibrations, mechanical disturbances or heavy shocks which may damage concrete.
- D. Duration of Curing
1. Continue curing until the cumulative number of days, not necessarily consecutive, during which the temperature of the air in contact with the concrete is above 451F has totaled seven days (three days for high early strength concrete).

**END OF SECTION**

**SECTION 033100**  
**CONCRETE FORMWORK**

**PART 1 - GENERAL**

1.01 WORK SPECIFIED

- A. All labor, materials, services and equipment necessary for furnishing, installing and removing all formwork for cast-in-place and precast concrete.

1.02 WORK SPECIFIED UNDER OTHER SECTIONS

- A. Reinforced Concrete.
- B. Concrete Reinforcement.
- C. Joints for Concrete.
- D. Concrete.

1.03 REFERENCES

- A. ACI 301 - Specifications for Structural Concrete for Buildings.
- B. ACI 347 - Recommended Practice for Concrete Formwork.
- C. PS 1 - Construction and Industrial Plywood.

1.04 SYSTEM DESCRIPTION

- A. Design, engineer, and construct formwork, shoring, and bracing to meet design and code requirements, so that the resultant concrete conforms to the required shapes, lines and dimensions as shown on the Contract Drawings.

1.05 QUALITY ASSURANCE

- A. The contractor shall be responsible for designing and constructing suitable and adequate falsework which shall be designed in accordance with ACI 347 "Recommended Practice for Concrete Formwork."
- B. The design of forms will take into account the effect of construction loads during and after placement of concrete.
- C. The forms shall be substantial, unyielding and constructed mortar tight and of

sufficient rigidity to prevent distortion due to the pressures of concrete and other loads incidental to the construction operations.

#### 1.06 FIELD SAMPLES

- A. Field samples of formed concrete must be submitted when the surface of the concrete is to receive a special architectural treatment.
- B. Construct and erect sample formwork panel for architectural concrete surfaces receiving special treatment or finish as a result of formwork. Formwork shall include a vertical and a horizontal form joint.

#### 1.07 SUBMITTALS

- A. Shop drawings must be submitted that show in detail the items of the form system affecting the appearance of architectural concrete surfaces such as joints, tie holes, liners, patterns and textures. Items must be shown in relation to the entire form system.
- B. Manufacturers' literature must be submitted with descriptions and recommended installation instructions for form ties, spreaders, corner formers, form liners and form coatings.
- C. Submittals shall indicate pertinent dimensions, materials and arrangement of joints and ties.

#### 1.08 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle materials with care to prevent damage to or contamination of formwork.

### **PART 2 - PRODUCTS**

#### 2.01 FORM MATERIALS

- A. Plywood: Exterior type softwood plywood, PS 1-66.
- B. Glass Fiber Fabric-Reinforced Plastic Forms: Shall be matched, tight fitting, stiffened to support the weight of wet concrete without deflections that exceed the structural tolerances or that are detrimental to the appearance of the finished concrete.
- C. Lumber: Softwood framing lumber, PS 20-70. Grade markings shall be clearly visible and shall be marked by grading rules approved by the

American Lumber Standards Committee.

- D. Steel: Minimum 16 gauge sheet, well matched, tight fitting, stiffened to support the weight of wet concrete without deflections that exceed the structural tolerances or that are detrimental to the appearances of the finished concrete. Metal forms may be used only for forming precast concrete.
- E. Void Forms: Shall be moisture resistant treated paper faces, seamless, laminated fiber material as approved by the Engineer. The forms shall be structurally sufficient to support the weight of a wet concrete mix and any construction or consolidation vibrations until the initial set.

## 2.02 FORMWORK ACCESSORIES

- A. Form ties shall be left in place and equipped with swaged (waterproofing) washers or other approved devices to prevent seepage of moisture along the tie.
  - 1. Minimum 1 inch depth of breakback.
- B. Form release agent shall be a colorless material which will not stain concrete, absorb moisture, or impair finish, bonding or color characteristics of coating intended for use on concrete.
- C. Fillets shall be used for all exposed vertical and horizontal corners.

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Verify lines, levels and measurements before proceeding with formwork.
- B. Notice shall be given 24 hours in advance of pour so that an inspection can be scheduled.
- C. Forms shall be inspected by the Engineer prior to concreting.
- D. No concreting shall be done in the absence of the Engineer without the written permission of the Engineer.

### 3.02 PREPARATION

- A. Conform to ACI 347, except as specified herein.

- B. Initially and before re-use, forms shall be cleaned and a coat of non-staining form release agent applied per the manufacturer's instructions.
  - 1. Care shall be taken to avoid splashing oil on reinforcing steel or existing concrete.
  - 2. Do not apply form release agent where concrete surfaces are scheduled to receive special finishes which may be affected by agent.

### 3.03 ERECTION

- A. Provide bracing to ensure stability of formwork. Strengthen all formwork liable to be overstressed by construction loads.
- B. Camber slabs and beams to achieve ACI 301 tolerances.
  - 1. 1/4-inch in 15 feet of span.
- C. Provide temporary ports in formwork to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain. Close ports with tight fitting panels, flush with inside face of forms, neatly fitted so that joints will not be apparent in exposed concrete surfaces.
- D. All form joints shall be backed up to assure that the edges of abutting panels are in the same plane, straight and true, and forced tightly together to minimize fins. The quality of the form contact surfaces shall be subject to the Engineer's approval.
- E. If installing void forms, protect them from moisture before concrete placement, protect from crushing during concrete placement.
- F. Do not displace or damage vapor barriers previously placed.
- G. Forms for exposed concrete shall be given special attention to provide a surface free from defects and form marks so that rubbing and finishing shall be kept to a minimum.
- H. Construct formwork to maintain tolerances in accordance with ACI 301.

### 3.04 INSERTS, EMBEDDED PARTS AND OPENINGS

- A. Provide formed openings where required for work embedded in or passing through concrete.



- B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors and other inserts.
- C. Install accessories in accordance with manufacturer's instructions, level and plumb. Ensure items are not disturbed during concrete placement.

3.05 FORM REMOVAL

- A. Do not remove forms and shoring or bracing until concrete has sufficient strength to support its own weight, and construction and design loads which may be imposed upon it.
- B. The following schedule shall be considered the minimum period before formwork can be removed under normal conditions with the use of Type II cement. Its use shall not relieve the contractor of responsibility for the safety and appearance of the structure.

Above Type of Form	60EF	50E-60EF	40E-50EF
Columns 5' high	24 hours	36 hours	72 hours
Columns 5'-10' high	3 days	5 days	7 days
Columns 10' high	5 days	7 days	10 days
Walls 5'	24 hours	36 hours	72 hours
Walls 5-10'	3 days	5 days	7 days
Walls 10'	5 days	7 days	10 days
Beam Side Forms	24 hours	36 hours	72 hours
Beam Bottom Forms	14 days	18 days	21 days
Slabs 6' Span*	5 days	7 days	14 days
Construction Joint	24 hours	36 hours	72 hours
Bulk Heads	24 hours	36 hours	72 hours

\*For slabs of more than 6 foot span add twelve (12) hours for each additional foot over 5 feet.

1. When the temperature to which the forms or concrete surfaces are

- exposed to falls below 40EF, the forms shall remain in place an additional time equal to the time of the sub-40EF exposure. If form insulation is used, concrete surface temperature shall apply.
2. The Engineer may modify the form removal schedule if compressive tests indicate that the in-place concrete is of sufficient strength. Methods of field curing the cylinders shall simulate that of the concrete and shall be approved by the Engineer. All such tests shall be at the option and expense of the contractor.
  3. When Type III cement or retarders are used, the form removal schedule above does not apply and may be modified by the Engineer.
- C. Immediately following the removal of the forms, the projecting ties shall be removed and all holes filled with grout flush with the wall. Care shall be taken to use the same brand of cement and same mix proportions used in the wall to prevent color differences.

### 3.06 CLEANING

- A. Clean forms to remove foreign matter as erection proceeds.
- B. Ensure that water and debris drain to exterior through clean-out ports.
- C. During cold weather, remove ice and snow from forms. Do not use de-icing salts. Do not use water to clean out completed forms, unless formwork and construction proceed within heated enclosure. Use compressed air to remove foreign matter.

**END OF SECTION**

**SECTION 033200**  
**CONCRETE REINFORCEMENT**

**PART 1 - GENERAL**

1.01 WORK SPECIFIED

- A. All labor, materials, equipment and services necessary for furnishing and installing all steel reinforcement, welded steel wire fabric and accessories for concrete required for the completion of the work.

1.02 WORK SPECIFIED UNDER OTHER SECTIONS

- A. Concrete Formwork
- B. Joints for Concrete
- C. Concrete

1.03 REFERENCES

- A. American Concrete Institute (ACI). The following codes, standards and recommendations are intended to specify minimum standards of performance:
  - 1. ACI 301 Specifications for Structural Concrete for Buildings.
  - 2. ACI 315 Details and Detailing of Concrete Reinforcement.
- B. American Society for Testing and Materials (ASTM). The following codes, standards and recommendations are referred to in these specifications and are to be considered a part of these specifications.
  - 1. ANSI/ASTM A82 Cold Drawn Steel Wire for Concrete Reinforcement.
  - 2. ANSI/ASTM A185 Welded Steel Wire Fabric for Concrete Reinforcement.
  - 3. ASTM A615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
- C. Concrete Reinforcing Steel Institute (CRSI). The following codes, standards,

and recommendations are referred to in these specifications and are to be considered a part of these specifications.

1. CRSI Manual of Practice.
2. CRSI 63 Recommended Practice for Placing Reinforcing Bars.
3. CRSI 65 Recommended Practice for Placing Bar Supports, Specifications and Nomenclature.

#### 1.04 QUALITY ASSURANCE

- A. Perform concrete reinforcement work in accordance with CRSI Manual of Standard Practice, and Documents 63 and 65.
- B. Conform to ACI 301 and 315.

#### 1.05 SHOP DRAWINGS

- A. Submit shop drawings.
- B. Indicate sizes, spacings, locations and quantities of reinforcing steel, wire fabric, bending and cutting schedules, splicing, stirrup spacing, supporting and spacing devices.

#### 1.06 CERTIFICATES

- A. Submit mill test certificates of supplied concrete reinforcing, indicating physical and chemical analysis.

### **PART 2 - PRODUCTS**

#### 2.01 MATERIALS

- A. Reinforcing Steel: ASTM A615, 60 ksi yield grade billet-steel deformed bars, uncoated finish.
- B. Welded Steel Wire Fabric: ANSI/ASTM A185 plain type; in flat sheets; coiled rolls; uncoated finish.
- C. Stirrup Steel: ANSI/ASTM A82.

#### 2.02 ACCESSORY MATERIALS

- A. Tie Wire: Minimum 16 gage annealed type.
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during installation and placement of concrete including load bearing pad on bottom to prevent vapor barrier puncture.
- C. Chairs, Bolsters, Bar Supports, Spacers Adjacent to Architectural Concrete Surfaces: Plastic tipped type; sized and shaped as required.

2.03 FABRICATION

- A. Unless otherwise shown or directed, the following minimum concrete cover shall be provided for reinforcement.

		<u>Minimum Cover, Inches.</u>
1.	Concrete cast against and permanently exposed to earth	3
2.	Concrete exposed to earth or weather No. 6 through No. 18 bar No. 5 bar and smaller	2 1-12
3.	Concrete not exposed to weather or in contact with ground: Slabs, nails, joists: No. 14 and No. 18 bars No. 11 and smaller Beams, columns: Primary reinforcement, ties, stirrups, spirals	12 3/4 12
4.	Concrete exposed to water or sewerage slabs, walls	2

- B. Locate reinforcing splices not indicated on drawings at points of minimum stress. Indicate location of splices on shop drawings.

**PART 3 - EXECUTION**

3.01 INSTALLATION

- A. Before placing concrete, clean reinforcement of foreign particles or coatings.
- B. Place, support and secure reinforcement against displacement. Do not deviate from alignment or measurement.
- C. Do not displace or damage vapor barrier, if required.

**END OF SECTION**

## SECTION 221124 - FACILITY NATURAL-GAS PIPING

## PART 1 - GENERAL

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section Includes:
1. Pipes, tubes, and fittings.
  2. Piping specialties.
  3. Piping and tubing joining materials.
  4. Valves.
  5. Pressure regulators.
  6. Service meters.
  7. Concrete bases.

**1.3 DEFINITIONS**

- A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
- B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- C. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

**1.4 PERFORMANCE REQUIREMENTS**

- A. Minimum Operating-Pressure Ratings:
1. Piping and Valves: 100 psig minimum unless otherwise indicated.
  2. Service Regulators: 100 psig minimum unless otherwise indicated.
  3. Minimum Operating Pressure of Service Meter: 5 psig.
- B. Natural-Gas System Pressure within Buildings: 0.5 psig or less.

**1.5 ACTION SUBMITTALS**

- A. Product Data: For each type of the following:
1. Piping specialties.
  2. Corrugated, stainless-steel tubing with associated components.
  3. Valves. Include pressure rating, capacity, settings, and electrical connection data of selected models.
  4. Pressure regulators. Indicate pressure ratings and capacities.
  5. Service meters. Indicate pressure ratings and capacities. Include bypass fittings.
  6. Dielectric fittings.

**1.6 INFORMATIONAL SUBMITTALS**

- A. Coordination Drawings: Plans and details, drawn to scale, on which natural-gas piping is shown and coordinated with other installations, using input from installers of the items involved.
- B. Site Survey: Plans, drawn to scale, on which natural-gas piping is shown and coordinated with other services and utilities.
- C. Qualification Data: For qualified professional engineer.
- D. Welding certificates.
- E. Field quality-control reports.

**1.7 CLOSEOUT SUBMITTALS**

- A. Operation and Maintenance Data: For pressure regulators and service meters to include in emergency, operation, and maintenance manuals.

**1.8 QUALITY ASSURANCE**

- A. Steel Support Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Pipe Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

**1.9 DELIVERY, STORAGE, AND HANDLING**

- A. Handling Flammable Liquids: Remove and dispose of liquids from existing natural-gas piping according to requirements of authorities having jurisdiction.
- B. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.
- C. Store and handle pipes and tubes having factory-applied protective coatings to avoid damaging coating and protect from direct sunlight.
- D. Protect stored PE pipes and valves from direct sunlight.

**1.10 PROJECT CONDITIONS**

- A. Perform site survey, research public utility records, and verify existing utility locations. Contact utility-locating service for area where Project is located.

**1.11 COORDINATION**

- A. Coordinate sizes and locations of concrete bases with actual equipment provided.
- B. Coordinate requirements for access panels and doors for valves installed concealed behind finished surfaces. Comply with requirements in Section 083113 "Access Doors and Frames."



## PART 2 - PRODUCTS

**2.1 PIPES, TUBES, AND FITTINGS**

- A. Steel Pipe: ASTM A 53/A 53M, black steel, Schedule 40, Type E or S, Grade B.
1. Malleable-Iron Threaded Fittings: ASME B16.3, Class 150, standard pattern.
  2. Wrought-Steel Welding Fittings: ASTM A 234/A 234M for butt welding and socket welding.
  3. Unions: ASME B16.39, Class 150, malleable iron with brass-to-iron seat, ground joint, and threaded ends.
  4. Forged-Steel Flanges and Flanged Fittings: ASME B16.5, minimum Class 150, including bolts, nuts, and gaskets of the following material group, end connections, and facings:
    - a. Material Group: 1.1.
    - b. End Connections: Threaded or butt welding to match pipe.
    - c. Lapped Face: Not permitted underground.
    - d. Gasket Materials: ASME B16.20, metallic, flat, asbestos free, aluminum o-rings, and spiral-wound metal gaskets.
    - e. Bolts and Nuts: ASME B18.2.1, carbon steel aboveground and stainless-steel underground.
  5. Protective Coating for Underground Piping: Factory-applied, three-layer coating of epoxy, adhesive, and PE.
    - a. Joint Cover Kits: Epoxy paint, adhesive, and heat-shrink PE sleeves.
  6. Mechanical Couplings:
    - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      - 1) Dresser Piping Specialties; Division of Dresser, Inc.
      - 2) Smith-Blair, Inc.
    - b. Stainless-steel flanges and tube with epoxy finish.
    - c. Buna-nitrile seals.
    - d. Stainless-steel bolts, washers, and nuts.
    - e. Coupling shall be capable of joining PE pipe to PE pipe, steel pipe to PE pipe, or steel pipe to steel pipe.
    - f. Steel body couplings installed underground on plastic pipe shall be factory equipped with anode.
- B. Corrugated, Stainless-Steel Tubing: Comply with ANSI/IAS LC 1.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. OmegaFlex, Inc.
    - b. Parker Hannifin Corporation; Parflex Division.
    - c. Titeflex.
    - d. Tru-Flex Metal Hose Corp.
  2. Tubing: ASTM A 240/A 240M, corrugated, Series 300 stainless steel.
  3. Coating: PE with flame retardant.

- a. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
    - 1) Flame-Spread Index: 25 or less.
    - 2) Smoke-Developed Index: 50 or less.
  4. Fittings: Copper-alloy mechanical fittings with ends made to fit and listed for use with corrugated stainless-steel tubing and capable of metal-to-metal seal without gaskets. Include brazing socket or threaded ends complying with ASME B1.20.1.
  5. Striker Plates: Steel, designed to protect tubing from penetrations.
  6. Manifolds: Malleable iron or steel with factory-applied protective coating. Threaded connections shall comply with ASME B1.20.1 for pipe inlet and corrugated tubing outlets.
  7. Operating-Pressure Rating: 5 psig.
  8. Bonding and grounding per NEC and NYS Fuel Gas Code.
- C. PE Pipe: ASTM D 2513, SDR 11.
1. PE Fittings: ASTM D 2683, socket-fusion type or ASTM D 3261, butt-fusion type with dimensions matching PE pipe.
  2. PE Transition Fittings: Factory-fabricated fittings with PE pipe complying with ASTM D 2513, SDR 11; and steel pipe complying with ASTM A 53/A 53M, black steel, Schedule 40, Type E or S, Grade B.
  3. Anodeless Service-Line Risers: Factory fabricated, and leak tested.
    - a. Underground Portion: PE pipe complying with ASTM D 2513, SDR 11 inlet.
    - b. Casing: Steel pipe complying with ASTM A 53/A 53M, Schedule 40, black steel, Type E or S, Grade B, with corrosion-protective coating covering. Vent casing aboveground.
    - c. Aboveground Portion: PE transition fitting.
    - d. Outlet shall be threaded or flanged or suitable for welded connection.
    - e. Tracer wire connection.
    - f. Ultraviolet shield.
    - g. Stake supports with factory finish to match steel pipe casing or carrier pipe.
  4. Transition Service-Line Risers: Factory fabricated, and leak tested.
    - a. Underground Portion: PE pipe complying with ASTM D 2513, SDR 11 inlet connected to steel pipe complying with ASTM A 53/A 53M, Schedule 40, Type E or S, Grade B, with corrosion-protective coating for aboveground outlet.
    - b. Outlet shall be threaded or flanged or suitable for welded connection.
    - c. Bridging sleeve over mechanical coupling.
    - d. Factory-connected anode.
    - e. Tracer wire connection.
    - f. Ultraviolet shield.
    - g. Stake supports with factory finish to match steel pipe casing or carrier pipe.
  5. Plastic Mechanical Couplings, NPS 1-1/2 and Smaller: Capable of joining PE pipe to PE pipe.
    - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      - 1) Lyall, R. W. & Company, Inc.
      - 2) Mueller Co.; Gas Products Div.
      - 3) Perfection Corporation; a subsidiary of American Meter Company.

- 4) .
- b. PE body with molded-in, stainless-steel support ring.
- c. Buna-nitrile seals.
- d. Acetal collets.
- e. Electro-zinc-plated steel stiffener.
6. Plastic Mechanical Couplings, NPS 2 and Larger: Capable of joining PE pipe to PE pipe, steel pipe to PE pipe, or steel pipe to steel pipe.
  - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - 1) Lyall, R. W. & Company, Inc.
    - 2) Mueller Co.; Gas Products Div.
    - 3) Perfection Corporation; a subsidiary of American Meter Company.
  - b. Fiber-reinforced plastic body.
  - c. PE body tube.
  - d. Buna-nitrile seals.
  - e. Acetal collets.
  - f. Stainless-steel bolts, nuts, and washers.
7. Steel Mechanical Couplings: Capable of joining plain-end PE pipe to PE pipe, steel pipe to PE pipe, or steel pipe to steel pipe.
  - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - 1) Dresser Piping Specialties; Division of Dresser, Inc.
    - 2) Smith-Blair, Inc.
  - b. Stainless-steel flanges and tube with epoxy finish.
  - c. Buna-nitrile seals.
  - d. Stainless-steel bolts, washers, and nuts.
  - e. Factory-installed anode for steel-body couplings installed underground.

## 2.2 PIPING SPECIALTIES

- A. Appliance Flexible Connectors:
  1. Indoor, Fixed-Appliance Flexible Connectors: Comply with ANSI Z21.24.
  2. Indoor, Movable-Appliance Flexible Connectors: Comply with ANSI Z21.69.
  3. Outdoor, Appliance Flexible Connectors: Comply with ANSI Z21.75.
  4. Corrugated stainless-steel tubing with polymer coating.
  5. Operating-Pressure Rating: 0.5 psig.
  6. End Fittings: Zinc-coated steel.
  7. Threaded Ends: Comply with ASME B1.20.1.
  8. Maximum Length: 72 inches
- B. Y-Pattern Strainers:
  1. Body: ASTM A 126, Class B, cast iron with bolted cover and bottom drain connection.
  2. End Connections: Threaded ends for NPS 2 and smaller; flanged ends for NPS 2-1/2 and larger.
  3. Strainer Screen: [40] [60]-mesh startup strainer, and perforated stainless-steel basket with 50 percent free area.
  4. CWP Rating: 125 psig.

- C. Weatherproof Vent Cap: Cast- or malleable-iron increaser fitting with corrosion-resistant wire screen, with free area at least equal to cross-sectional area of connecting pipe and threaded-end connection.

### 2.3 JOINING MATERIALS

- A. Joint Compound and Tape: Suitable for natural gas.
- B. Welding Filler Metals: Comply with AWS D10.12/D10.12M for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
- C. Brazing Filler Metals: Alloy with melting point greater than 1000 deg F complying with AWS A5.8/A5.8M. Brazing alloys containing more than 0.05 percent phosphorus are prohibited.

### 2.4 MANUAL GAS SHUTOFF VALVES

- A. See "Underground Manual Gas Shutoff Valve Schedule" and "Aboveground Manual Gas Shutoff Valve Schedule" Articles for where each valve type is applied in various services.
- B. General Requirements for Metallic Valves, NPS 2 and Smaller: Comply with ASME B16.33.
1. CWP Rating: 125 psig.
  2. Threaded Ends: Comply with ASME B1.20.1.
  3. Dryseal Threads on Flare Ends: Comply with ASME B1.20.3.
  4. Tamperproof Feature: Locking feature for valves indicated in "Underground Manual Gas Shutoff Valve Schedule" and "Aboveground Manual Gas Shutoff Valve Schedule" Articles.
  5. Listing: Listed and labeled by an NRTL acceptable to authorities having jurisdiction for valves 1 inch and smaller.
  6. Service Mark: Valves 1-1/4 inches to NPS 2 shall have initials "WOG" permanently marked on valve body.
- C. General Requirements for Metallic Valves, NPS 2-1/2 and Larger: Comply with ASME B16.38.
1. CWP Rating: 125 psig.
  2. Flanged Ends: Comply with ASME B16.5 for steel flanges.
  3. Tamperproof Feature: Locking feature for valves indicated in "Underground Manual Gas Shutoff Valve Schedule" and "Aboveground Manual Gas Shutoff Valve Schedule" Articles.
  4. Service Mark: Initials "WOG" shall be permanently marked on valve body.
- D. Two-Piece, Full-Port, Bronze Ball Valves with Bronze Trim: MSS SP-110.S
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. BrassCraft Manufacturing Company; a Masco company.
    - b. Conbraco Industries, Inc.; Apollo Div.
    - c. Lyall, R. W. & Company, Inc.
    - d. McDonald, A. Y. Mfg. Co.
    - e. Perfection Corporation; a subsidiary of American Meter Company.
  2. Body: Bronze, complying with ASTM B 584.
  3. Ball: Chrome-plated bronze.
  4. Stem: Bronze; blowout proof.
  5. Seats: Reinforced TFE; blowout proof.
  6. Packing: Threaded-body packnut design with adjustable-stem packing.

7. Ends: Threaded, flared, or socket as indicated in "Underground Manual Gas Shutoff Valve Schedule" and "Aboveground Manual Gas Shutoff Valve Schedule" Articles.
  8. CWP Rating: 600 psig.
  9. Listing: Valves NPS 1 and smaller shall be listed and labeled by an NRTL acceptable to authorities having jurisdiction.
  10. Service: Suitable for natural-gas service with "WOG" indicated on valve body.
- E. Bronze Plug Valves: MSS SP-78.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Lee Brass Company.
    - b. McDonald, A. Y. Mfg. Co.
  2. Body: Bronze, complying with ASTM B 584.
  3. Plug: Bronze.
  4. Ends: Threaded, socket, or flanged as indicated in "Underground Manual Gas Shutoff Valve Schedule" and "Aboveground Manual Gas Shutoff Valve Schedule" Articles.
  5. Operator: Square head or lug type with tamperproof feature where indicated.
  6. Pressure Class: 125 psig.
  7. Listing: Valves NPS 1 and smaller shall be listed and labeled by an NRTL acceptable to authorities having jurisdiction.
  8. Service: Suitable for natural-gas service with "WOG" indicated on valve body.
- F. Cast-Iron, Lubricated Plug Valves: MSS SP-78.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Flowserve.
    - b. Homestead Valve; a division of Olson Technologies, Inc.
    - c. McDonald, A. Y. Mfg. Co.
    - d. Milliken Valve Company.
    - e. Mueller Co.; Gas Products Div.
    - f. R&M Energy Systems, A Unit of Robbins & Myers, Inc.
  2. Body: Cast iron, complying with ASTM A 126, Class B.
  3. Plug: Bronze or nickel-plated cast iron.
  4. Seat: Coated with thermoplastic.
  5. Stem Seal: Compatible with natural gas.
  6. Ends: Threaded or flanged as indicated in "Underground Manual Gas Shutoff Valve Schedule" and "Aboveground Manual Gas Shutoff Valve Schedule" Articles.
  7. Operator: Square head or lug type with tamperproof feature where indicated.
  8. Pressure Class: 125 psig.
  9. Listing: Valves NPS 1 and smaller shall be listed and labeled by an NRTL acceptable to authorities having jurisdiction.
  10. Service: Suitable for natural-gas service with "WOG" indicated on valve body.
- G. Valve Boxes:
1. Cast-iron, two-section box.
  2. Top section with cover with "GAS" lettering.
  3. Bottom section with base to fit over valve and barrel a minimum of 5 inches in diameter.
  4. Adjustable cast-iron extensions of length required for depth of bury.
  5. Include tee-handle, steel operating wrench with socket end fitting valve nut or flat head, and with stem of length required to operate valve.

## 2.5 MOTORIZED GAS VALVES

### A. Automatic Gas Valves: Comply with ANSI Z21.21.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Dungs, Karl, Inc.
  - b. Eaton.
  - c. Eclipse Innovative Thermal Technologies.
  - d. Honeywell Building Solutions; Honeywell International, Inc.
  - e. Johnson Controls.
2. Body: Brass or aluminum.
3. Seats and Disc: Nitrile rubber.
4. Springs and Valve Trim: Stainless steel.
5. Normally closed.
6. Visual position indicator.
7. **Electrical or Mechanical** operator for actuation by appliance automatic shutoff device.

### B. Electrically Operated Valves: Comply with UL 429.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. ASCO. Equal to 8043
  - b. WATTS.
2. Equipment labeled **GSV-1**: Provide electrically Operated Gas Valves: UL 429, bronze, aluminum, or cast-iron body solenoid valve; 120-V ac, 60 Hz, Class B, continuous-duty molded coil. Include NEMA ISC 6, Type 4, coil enclosure and electrically opened and closed dual coils. Valve position shall normally be closed. Product equal to Asco 108 Relay panel (**RP**) with series 8215 solenoid valve and master control station (**MCS**) catalog number 216C89. Provide master control station with necessary recessed (or surface mounted) box. See drawing for location and # of master control stations.

## 2.6 PRESSURE REGULATORS

### A. General Requirements:

1. Single stage and suitable for natural gas.
2. Steel jacket and corrosion-resistant components.
3. Elevation compensator.
4. End Connections: Threaded for regulators NPS 2 and smaller; flanged for regulators NPS 2-1/2 and larger.

### B. Line Pressure Regulators: Comply with ANSI Z21.80.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - a. Actaris.
  - b. American Meter Company.
  - c. Eclipse Combustion, Inc.

- d. Fisher Control Valves and Regulators; Division of Emerson Process Management.
  - e. Invensys.
  - f. Maxitrol Company.
  - g. Richards Industries; Jordan Valve Div.
  2. Body and Diaphragm Case: Cast iron or die-cast aluminum.
  3. Springs: Zinc-plated steel; interchangeable.
  4. Diaphragm Plate: Zinc-plated steel.
  5. Seat Disc: Nitrile rubber resistant to gas impurities, abrasion, and deformation at the valve port.
  6. Orifice: Aluminum; interchangeable.
  7. Seal Plug: Ultraviolet-stabilized, mineral-filled nylon.
  8. Single-port, self-contained regulator with orifice no larger than required at maximum pressure inlet, and no pressure sensing piping external to the regulator.
  9. Pressure regulator shall maintain discharge pressure setting downstream, and not exceed 150 percent of design discharge pressure at shutoff.
  10. Overpressure Protection Device: Factory mounted on pressure regulator.
  11. Atmospheric Vent: Factory- or field-installed, stainless-steel screen in opening if not connected to vent piping.
  12. Maximum Inlet Pressure: 10 psig.
- C. Appliance Pressure Regulators: Comply with ANSI Z21.18.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Canadian Meter Company Inc.
    - b. Eaton Corporation; Controls Div.
    - c. Harper Wyman Co.
    - d. Maxitrol Company.
    - e. SCP, Inc.
  2. Body and Diaphragm Case: Die-cast aluminum.
  3. Springs: Zinc-plated steel; interchangeable.
  4. Diaphragm Plate: Zinc-plated steel.
  5. Seat Disc: Nitrile rubber.
  6. Seal Plug: Ultraviolet-stabilized, mineral-filled nylon.
  7. Factory-Applied Finish: Minimum three-layer polyester and polyurethane paint finish.
  8. Regulator may include vent limiting device, instead of vent connection, if approved by authorities having jurisdiction.
  9. Maximum Inlet Pressure: 2 psig.

## 2.7 DIELECTRIC FITTINGS

- A. General Requirements: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined.
- B. Dielectric Unions:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Capitol Manufacturing Company.
    - b. Central Plastics Company.
    - c. Hart Industries International, Inc.
    - d. Jomar International Ltd.

- e. Matco-Norca, Inc.
  - f. McDonald, A. Y. Mfg. Co.
  - g. Watts Regulator Co.; a division of Watts Water Technologies, Inc.
  - h. Wilkins; a Zurn company.
2. Description:
    - a. Standard: ASSE 1079.
    - b. Pressure Rating: 125 psig minimum at 180 deg F.
    - c. End Connections: Solder-joint copper alloy and threaded ferrous.
- C. Dielectric Flanges:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Capitol Manufacturing Company.
    - b. Central Plastics Company.
    - c. Matco-Norca, Inc.
    - d. Watts Regulator Co.; a division of Watts Water Technologies, Inc.
    - e. Wilkins; a Zurn company.
  2. Description:
    - a. Standard: ASSE 1079.
    - b. Factory-fabricated, bolted, companion-flange assembly.
    - c. Pressure Rating: 125 psig minimum at 180 deg F.
    - d. End Connections: Solder-joint copper alloy and threaded ferrous; threaded solder-joint copper alloy and threaded ferrous.
- D. Dielectric-Flange Insulating Kits:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Advance Products & Systems, Inc.
    - b. Calpico, Inc.
    - c. Central Plastics Company.
    - d. Pipeline Seal and Insulator, Inc.
  2. Description:
    - a. Nonconducting materials for field assembly of companion flanges.
    - b. Pressure Rating: 150 psig.
    - c. Gasket: Neoprene or phenolic.
    - d. Bolt Sleeves: Phenolic or polyethylene.
    - e. Washers: Phenolic with steel backing washers.

## 2.8 LABELING AND IDENTIFYING

- A. Detectable Warning Tape: Acid- and alkali-resistant, PE film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored yellow.



## PART 3 - EXECUTION

**3.1 EXAMINATION**

- A. Examine roughing-in for natural-gas piping system to verify actual locations of piping connections before equipment installation.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 PREPARATION**

- A. Close equipment shutoff valves before turning off natural gas to premises or piping section.
- B. Inspect natural-gas piping according to the New York State Fuel Gas Code to determine that natural-gas utilization devices are turned off in piping section affected.
- C. Comply with the New York State Fuel Gas Code requirements for prevention of accidental ignition.

**3.3 OUTDOOR PIPING INSTALLATION**

- A. Comply with the New York State Fuel Gas Code for installation and purging of natural-gas piping.
- B. Install underground, natural-gas piping buried at least [**36 inches**] below finished grade. Comply with requirements in Section 312000 "Earth Moving" for excavating, trenching, and backfilling.
  - 1. If natural-gas piping is installed less than 36 inches below finished grade, install it in containment conduit.
- C. Install underground, PE, natural-gas piping according to ASTM D 2774.
- D. Steel Piping with Protective Coating:
  - 1. Apply joint cover kits to pipe after joining to cover, seal, and protect joints.
  - 2. Repair damage to PE coating on pipe as recommended in writing by protective coating manufacturer.
  - 3. Replace pipe having damaged PE coating with new pipe.
- E. Copper Tubing with Protective Coating:
  - 1. Apply joint cover kits over tubing to cover, seal, and protect joints.
  - 2. Repair damage to PE coating on pipe as recommended in writing by protective coating manufacturer.
- F. Install fittings for changes in direction and branch connections.
- G. Install pressure gage upstream and downstream from each service regulator. Pressure gages are specified in Section 220519 "Meters and Gages for PLUMBING Piping."

**3.4 INDOOR PIPING INSTALLATION**

- A. Comply with the New York State Fuel Gas Code for installation and purging of natural-gas piping.
- B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements are used to size pipe and calculate friction loss, expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- C. Arrange for pipe spaces, chases, slots, sleeves, and openings in building structure during progress of construction, to allow for mechanical installations.

- D. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- E. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- F. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- G. Locate valves for easy access.
- H. Install natural-gas piping at uniform grade of 2 percent down toward drip and sediment traps.
- I. Install piping free of sags and bends.
- J. Install fittings for changes in direction and branch connections.
- K. Verify final equipment locations for roughing-in.
- L. Comply with requirements in Sections specifying gas-fired appliances and equipment for roughing-in requirements.
- M. Drips and Sediment Traps: Install drips at points where condensate may collect, including service-meter outlets. Locate where accessible to permit cleaning and emptying. Do not install where condensate is subject to freezing.
  - 1. Construct drips and sediment traps using tee fitting with bottom outlet plugged or capped. Use nipple a minimum length of 3 pipe diameters, but not less than 3 inches long and same size as connected pipe. Install with space below bottom of drip to remove plug or cap.
- N. Extend relief vent connections for service regulators, line regulators, and overpressure protection devices to outdoors and terminate with weatherproof vent cap.
- O. Conceal pipe installations in walls, pipe spaces, utility spaces, above ceilings, below grade or floors, and in floor channels unless indicated to be exposed to view.
- P. Concealed Location Installations: Except as specified below, install concealed natural-gas piping and piping installed under the building in containment conduit constructed of steel pipe with welded joints as described in Part 2. Install a vent pipe from containment conduit to outdoors and terminate with weatherproof vent cap.
  - 1. Above Accessible Ceilings: Natural-gas piping, fittings, valves, and regulators may be installed in accessible spaces without containment conduit.
  - 2. In Floors: Install natural-gas piping with welded or brazed joints and protective coating in cast-in-place concrete floors. Cover piping to be cast in concrete slabs with minimum of 1-1/2 inches of concrete. Piping may not be in physical contact with other metallic structures such as reinforcing rods or electrically neutral conductors. Do not embed piping in concrete slabs containing quick-set additives or cinder aggregate.
  - 3. In Floor Channels: Install natural-gas piping in floor channels. Channels must have cover and be open to space above cover for ventilation.
  - 4. In Walls or Partitions: Protect tubing installed inside partitions or hollow walls from physical damage using steel striker barriers at rigid supports.
    - a. Exception: Tubing passing through partitions or walls does not require striker barriers.
  - 5. Prohibited Locations:
    - a. Do not install natural-gas piping in or through circulating air ducts, clothes or trash chutes, chimneys or gas vents (flues), ventilating ducts, or dumbwaiter or elevator shafts.

- b. Do not install natural-gas piping in solid walls or partitions.
- Q. Use eccentric reducer fittings to make reductions in pipe sizes. Install fittings with level side down.
- R. Connect branch piping from top or side of horizontal piping.
- S. Install unions in pipes NPS 2 and smaller, adjacent to each valve, at final connection to each piece of equipment. Unions are not required at flanged connections.
- T. Do not use natural-gas piping as grounding electrode.
- U. Install strainer on inlet of each line-pressure regulator and automatic or electrically operated valve.
- V. Install pressure gage upstream and downstream from each line regulator. Pressure gages are specified in Section 22 "Meters and Gages for Plumbing Piping."
- W. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 22 "Sleeves and Sleeve Seals for Plumbing Piping."
- X. Install sleeve seals for piping penetrations of concrete walls and slabs. Comply with requirements for sleeve seals specified in Section 22 "Sleeves and Sleeve Seals for Plumbing Piping."
- Y. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 22 "Escutcheons for Plumbing Piping."

### 3.5 SERVICE-METER ASSEMBLY INSTALLATION

- A. Install service-meter assemblies aboveground as directed by Gas Utility Company.
- B. Install metal shutoff valves upstream from service regulators. Shutoff valves are not required at second regulators if two regulators are installed in series.
- C. Install strainer on inlet of service-pressure regulator and meter set.
- D. Install service regulators mounted outside with vent outlet horizontal or facing down. Install screen in vent outlet if not integral with service regulator.
- E. Install metal shutoff valves upstream from service meters. Install dielectric fittings downstream from service meters.
- F. Install service meters downstream from pressure regulators.
- G. Install metal bollards to protect meter assemblies. Comply with requirements in Section 055000 "Metal Fabrications" for pipe bollards.

### 3.6 VALVE INSTALLATION

- A. Install manual gas shutoff valve for each gas appliance ahead of corrugated stainless-steel tubing, aluminum, or copper connector.
- B. Install underground valves with valve boxes.
- C. Install regulators and overpressure protection devices with maintenance access space adequate for servicing and testing.
- D. Install earthquake valves aboveground outside buildings according to listing.
- E. Install anode for metallic valves in underground PE piping.

### 3.7 PIPING JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Threaded Joints:
  - 1. Thread pipe with tapered pipe threads complying with ASME B1.20.1.
  - 2. Cut threads full and clean using sharp dies.
  - 3. Ream threaded pipe ends to remove burrs and restore full inside diameter of pipe.
  - 4. Apply appropriate tape or thread compound to external pipe threads unless dryseal threading is specified.
  - 5. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- D. Welded Joints:
  - 1. Construct joints according to AWS D10.12/D10.12M, using qualified processes and welding operators.
  - 2. Bevel plain ends of steel pipe.
  - 3. Patch factory-applied protective coating as recommended by manufacturer at field welds and where damage to coating occurs during construction.
- E. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter.
- F. Flanged Joints: Install gasket material, size, type, and thickness appropriate for natural-gas service. Install gasket concentrically positioned.
- G. Flared Joints: Cut tubing with roll cutting tool. Flare tube end with tool to result in flare dimensions complying with SAE J513. Tighten finger tight, then use wrench. Do not overtighten.
- H. PE Piping Heat-Fusion Joints: Clean and dry joining surfaces by wiping with clean cloth or paper towels. Join according to ASTM D 2657.
  - 1. Plain-End Pipe and Fittings: Use butt fusion.
  - 2. Plain-End Pipe and Socket Fittings: Use socket fusion.

### 3.8 HANGER AND SUPPORT INSTALLATION

- A. Install seismic restraints on piping. Comply with requirements for seismic-restraint devices specified in Section 22 "Vibration and Seismic Controls for Piping and Equipment."
- B. Comply with requirements for pipe hangers and supports specified in Section 22 "Hangers and Supports for Piping and Equipment."
- C. Install hangers for horizontal steel piping with the following maximum spacing and minimum rod sizes:
  - 1. NPS 1 and Smaller: Maximum span, 96 inches; minimum rod size, 3/8 inch.
  - 2. NPS 1-1/4: Maximum span, 108 inches; minimum rod size, 3/8 inch.
  - 3. NPS 1-1/2 and NPS 2: Maximum span, 108 inches; minimum rod size, 3/8 inch.
  - 4. NPS 2-1/2 to NPS 3-1/2: Maximum span, 10 feet; minimum rod size, 1/2 inch.
  - 5. NPS 4 and Larger: Maximum span, 10 feet; minimum rod size, 5/8 inch.
- D. Install hangers for horizontal drawn-temper copper tubing with the following maximum spacing and minimum rod sizes:
  - 1. NPS 3/8: Maximum span, 48 inches; minimum rod size, 3/8 inch.
  - 2. NPS 1/2 and NPS 5/8: Maximum span, 72 inches; minimum rod size, 3/8 inch.

3. NPS 3/4 and NPS 7/8: Maximum span, 84 inches; minimum rod size, 3/8 inch.
  4. NPS 1: Maximum span, 96 inches; minimum rod size, 3/8 inch.
- E. Install hangers for horizontal, corrugated stainless-steel tubing with the following maximum spacing and minimum rod sizes:
1. NPS 3/8: Maximum span, 48 inches; minimum rod size, 3/8 inch.
  2. NPS 1/2: Maximum span, 72 inches; minimum rod size, 3/8 inch.
  3. NPS 3/4 and Larger: Maximum span, 96 inches; minimum rod size, 3/8 inch.

### **3.9 CONNECTIONS**

- A. Connect to utility's gas main according to utility's procedures and requirements.
- B. Install natural-gas piping electrically continuous, and bonded to gas appliance equipment grounding conductor of the circuit powering the appliance according to NFPA 70.
- C. Install piping adjacent to appliances to allow service and maintenance of appliances.
- D. Connect piping to appliances using manual gas shutoff valves and unions. Install valve within 72 inches of each gas-fired appliance and equipment. Install union between valve and appliances or equipment.
- E. Sediment Traps: Install tee fitting with capped nipple in bottom to form drip, as close as practical to inlet of each appliance.

### **3.10 LABELING AND IDENTIFYING**

- A. Comply with requirements in Section 220553 "Identification for Plumbing Piping and Equipment" for piping and valve identification.
- B. Install detectable warning tape directly above gas piping, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

### **3.11 PAINTING**

- A. Comply with requirements in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting" for painting interior and exterior natural-gas piping.
- B. Paint exposed, exterior metal piping, valves, service regulators, service meters and meter bars, earthquake valves, and piping specialties, except components, with factory-applied paint or protective coating.
1. Alkyd System: MPI EXT 5.1D.
    - a. Prime Coat: Alkyd anticorrosive metal primer.
    - b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
    - c. Topcoat: Exterior alkyd enamel (semigloss).
    - d. Color: Gray.
- C. Paint exposed, interior metal piping, valves, service regulators, service meters and meter bars, earthquake valves, and piping specialties, except components, with factory-applied paint or protective coating.
1. Alkyd System: MPI INT 5.1E.
    - a. Prime Coat: Alkyd anticorrosive metal primer.
    - b. Intermediate Coat: Interior alkyd matching topcoat.
    - c. Topcoat: Interior alkyd (eggshell).
    - d. Color: Gray.

- D. Damage and Touchup: Repair marred and damaged factory-applied finishes with materials and by procedures to match original factory finish.

### **3.12 CONCRETE BASES**

- A. Concrete Bases: Anchor equipment to concrete base.
1. Construct concrete bases of dimensions indicated, but not less than 4 inches larger in both directions than supported unit.
  2. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of the base.
  3. Install epoxy-coated anchor bolts for supported equipment that extend through concrete base, and anchor into structural concrete floor.
  4. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  5. Install anchor bolts to elevations required for proper attachment to supported equipment.
  6. Use 3000-psig, 28-day, compressive-strength concrete and reinforcement as specified in Section 033 "Cast-in-Place Concrete."

### **3.13 FIELD QUALITY CONTROL**

- A. Perform tests and inspections.
- B. Tests and Inspections:
1. Test, inspect, and purge natural gas according to NFPA 54 and the NYS Fuel Gas Code and authorities having jurisdiction.
  2. For gas piping with working pressure up to 14" WC, the completed line is to be pressure tested with air or inert gas for a minimum of one hour at 50 psig.
- C. Natural-gas piping will be considered defective if it does not pass tests and inspections.
- D. Reports: Prepare inspection and test reports and have them signed by authorities having jurisdiction. Submit all reports to Architect.

### **3.14 DEMONSTRATION**

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain earthquake valves.

### **3.15 OUTDOOR PIPING SCHEDULE**

- A. Underground natural-gas pipingshall be one of the following:
1. PE pipe and fittings joined by heat fusion, or mechanical couplings; service-line risers with tracer wire terminated in an accessible location.
  2. Steel pipe with wrought-steel fittings and welded joints, or mechanical couplings. Coat pipe and fittings with protective coating for steel piping.
- B. Aboveground natural-gas pipingshall be one of the following:
1. Steel pipe with malleable-iron fittings and threaded joints.
  2. Steel pipe with wrought-steel fittings and welded joints.
- C. Containment Conduit: Steel pipe with wrought-steel fittings and welded joints. Coat pipe and fittings with protective coating for steel piping.

**3.16 INDOOR PIPING SCHEDULE FOR SYSTEM PRESSURES LESS THAN 0.5 PSIG**

- A. Aboveground, branch piping NPS 1 and smaller shall be one of the following:
  - 1. Corrugated stainless-steel tubing with mechanical fittings having socket or threaded ends to match adjacent piping.
  - 2. Steel pipe with malleable-iron fittings and threaded joints.
- B. Aboveground, distribution piping shall be one of the following:
  - 1. Steel pipe with malleable-iron fittings and threaded joints.
  - 2. Steel pipe with wrought-steel fittings and welded joints.
- C. Underground, below building, piping shall be one of the following:
  - 1. Steel pipe with wrought-steel fittings and welded joints.
  - 2. Corrugated stainless-steel tubing with no joints, routed in vented steel conduit.
- D. Containment Conduit: Steel pipe with wrought-steel fittings and welded joints. Coat pipe and fittings with protective coating for steel piping.
- E. Containment Conduit Vent Piping: Steel pipe with malleable-iron fittings and threaded or wrought-steel fittings with welded joints. Coat underground pipe and fittings with protective coating for steel piping.

**3.17 INDOOR PIPING SCHEDULE FOR SYSTEM PRESSURES MORE THAN 0.5 PSIG AND LESS THAN 5 PSIG**

- A. Aboveground, branch piping NPS 1 and smaller shall be one of the following:
  - 1. Corrugated stainless-steel tubing with mechanical fittings having socket or threaded ends to match adjacent piping.
  - 2. Steel pipe with malleable-iron fittings and threaded joints.
- B. Aboveground, distribution piping shall be one of the following:
  - 1. Steel pipe with malleable-iron fittings and threaded joints.
  - 2. Steel pipe with steel welding fittings and welded joints.
- C. Underground, below building, piping shall be the following:
  - 1. Steel pipe with wrought-steel fittings and welded joints.
- D. Containment Conduit: Steel pipe with wrought-steel fittings and welded joints. Coat underground pipe and fittings with protective coating for steel piping.
- E. Containment Conduit Vent Piping: Steel pipe with malleable-iron fittings and threaded or wrought-steel fittings with welded joints. Coat underground pipe and fittings with protective coating for steel piping.

**3.18 INDOOR PIPING SCHEDULE FOR SYSTEM PRESSURES MORE THAN 5 PSIG**

- A. Aboveground Piping: Maximum operating pressure more than 5 psig.
- B. Aboveground, Branch Piping: Steel pipe with steel welding fittings and welded joints.
- C. Aboveground, distribution piping shall be the following:
  - 1. Steel pipe with steel welding fittings and welded joints.
- D. Underground, below building, piping shall be the following:
  - 1. Steel pipe with wrought-steel fittings and welded joints.
- E. Containment Conduit: Steel pipe with wrought-steel fittings and welded joints. Coat pipe and fittings with protective coating for steel piping.

- F. Containment Conduit Vent Piping: Steel pipe with malleable-iron fittings and threaded or wrought-steel fittings with welded joints. Coat underground pipe and fittings with protective coating for steel piping.

### **3.19 UNDERGROUND MANUAL GAS SHUTOFF VALVE SCHEDULE**

- A. Connections to Existing Gas Piping: Use valve and fitting assemblies made for tapping utility's gas mains and listed by an NRTL.
- B. Underground:
1. PE valves.
  2. NPS 2 and Smaller: Bronze plug valves.
  3. NPS 2-1/2 and Larger: Cast-iron, lubricated plug valves.

### **3.20 ABOVEGROUND MANUAL GAS SHUTOFF VALVE SCHEDULE**

- A. Valves for pipe sizes NPS 2 and smaller at service meter shall be one of the following:
1. Two-piece, full-port, bronze ball valves with bronze trim.
  2. Bronze plug valve.
- B. Valves for pipe sizes NPS 2-1/2 and larger at service meter shall be one of the following:
1. Two-piece, full-port, bronze ball valves with bronze trim.
  2. Bronze plug valve.
  3. Cast-iron, lubricated plug valve.
- C. Distribution piping valves for pipe sizes NPS 2 and smaller shall be one of the following:
1. Two-piece, full-port, bronze ball valves with bronze trim.
  2. Bronze plug valve.
- D. Distribution piping valves for pipe sizes NPS 2-1/2 and larger shall be one of the following:
1. Bronze plug valve.
  2. Cast-iron, lubricated plug valve.
- E. Valves in branch piping for single appliance shall be one of the following:
1. Two-piece, full-port, bronze ball valves with bronze trim.
  2. Bronze plug valve.

END OF SECTION 221124



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**SECTION 260010**  
**GENERAL PROVISIONS FOR ELECTRICAL WORK**

**PART 1 GENERAL****1.01 SCOPE OF WORK**

- A. The work included in this Contract is shown on the drawings and described in these specifications. It consists of furnishing all labor, material, services, supervision and connection of all systems shown and/or specified including the requirements of:
  - 1. DIVISION 00 - BIDDING AND CONTRACT REQUIREMENTS
  - 2. DIVISION 1 - GENERAL REQUIREMENT
  - 3. DIVISION 26 - GENERAL REQUIREMENT
- B. Contractor is responsible to review and understand all drawings and all work of all trades to ensure a complete and thorough project.
- C. Provide all labor, tools, materials, equipment, coordination, and plans necessary for installation and proper operation of the electrical systems.
- D. Contract drawings and specifications are complementary and must be so used to ascertain all requirements of the work.

**1.02 DEFINITIONS**

- A. Provide, furnish, install, and furnish and install shall have the same meaning. That is, the Contractor shall purchase, transport to the site and install all required components of the work unless specifically stated otherwise in the contract documents.
- B. Wiring pertains to raceway, fittings, conductors, terminations, hangers, supports, etc. as required to form a complete system.

**1.03 DRAWINGS AND SPECIFICATIONS**

- A. The plans are diagrammatic and indicate only the sizes and general arrangement of conduit, devices, and equipment; exact locations of all elements shall be determined as work progresses, in cooperation with the work of other trades. It is not intended to show every item of work or minor piece of equipment, but every item shall be furnished and installed without additional remuneration as necessary to complete the system in accordance with the best practice of the trade.
- B. As previously stated, the exact locations of electrical devices and equipment are diagrammatic. The owner may request for any devices or equipment to be installed at different locations than what is indicated on the drawings in a specific area or room. It is the responsibility of the Electrical Contractor to coordinate the locations of devices in all areas prior to installation.

**1.04 PRODUCT EQUIVALENTS**

- A. Where, in these specifications or on drawings, certain kinds, types, brands, or manufacturers of materials are named, they shall be regarded as required standard of quality. Where two or more are named these are presumed to be equal, and Contractor may select one of those items.
  - B. If Contractor desires to use any kind, type, brand, or manufacturer of material other than those named in specification, he may submit the request for approval to the Architect well in advance of the bid date.
  - C. Requests for approval of proposed equivalents will be received by Architect only from the Contractor.
  - D. If the Architect approves a proposed equivalent prior to receipt of Bids, such approval will be set forth in an Addendum.
  - E. After the bid opening the apparent low bidder or bidders will be notified by the Architect or Owner and shall submit to the Architect in writing, within ten (10) calendar days what equivalent
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kind, type, brand, or manufacture is included in bid in lieu of specified items. No equivalents will be considered after this submission.

- F. Contractor shall have burden of proving, at Contractor's own cost and expense, to satisfaction of Owner/Architect, that proposed product is similar and equal to named product. In making such determination Owner/Architect will be sole judge of objective and appearance criteria that proposed product must meet in order for it to be approved.
1. Supporting data on equivalency is responsibility of bidder. For each equivalent to base specification, included in products list, submit information describing in specific detail:
    - a. Wherein it differs from quality and performance required by base specification.
    - b. Changes required in other elements of work because of equivalent.
    - c. Effect on construction schedule.
    - d. Any required license fees or royalties.
    - e. Availability of maintenance service, and source of replacement materials.
    - f. Such other information as may be required by Owner.
- G. Owner, through Architect, shall be judge of acceptability of proposed equivalents. Risk of whether bid equivalents will be accepted is borne by Contractor.
- H. Submission of an equivalent product and/or material constitutes a representation that Contractor:
1. Has investigated proposed product and determined it is equal to or superior in all respects to that specified.
  2. Will provide same warranties or bonds for equivalent as for product specified.
  3. Will coordinate installation of an accepted equivalent into work and make such other changes as may be required to make work complete in all respects.
  4. Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.
  5. Will provide, at own cost and expense, any different quantity and/or arrangement of ductwork, piping, wiring, conduit or any part of work from that specified, detailed or indicated in Contract Documents if required for proper installation of an approved equivalent.
  6. Will provide, at own cost and expense, all such revision and redesign and all new drawings and details required by Architect for approval if proposed equivalent product requires a revision or redesign of any part of work covered by this contract.
- I. Contractor must sign the "Equivalent Certification" following this specification section and deliver it to the Architect along with a complete list of proposed equivalents within ten (10) calendar days after notification from the Architect or Owner. This is mandatory and must be done prior to award of contracts.

#### **1.05 APPLICABLE STANDARDS**

- A. All equipment shall bear the UL label.
- B. The latest edition of the following minimum standards shall apply wherever applicable:
1. American Standards Association
  2. American Society for Testing Materials
  3. Electrical Testing Laboratories, Inc.
  4. Institute of Electrical and Electronic Engineers
  5. Insulated Power Cable for Engineers Association
  6. Occupational Safety and Health Act
  7. National Electric Code
  8. National Electrical Manufacturers Association
  9. National Electrical Safety Code
  10. National Fire Protection Association
  11. Underwriters Laboratories, Inc.

12. Power company standards and regulations.
13. Local and state codes.

- C. In the event there are conflicts between specifications and standards, standards shall govern unless specifications are in excess of standards.

#### **1.06 PERMITS AND INSPECTIONS**

- A. Permits: The Contractor shall apply for and pay the cost for any local permits necessary for the work of this contract.
- B. Inspections: The Contractor shall be responsible for obtaining a 3rd party electrical inspection of and the certificate by the approved inspection agency for the entire electrical system.
- C. The undertaking of periodic inspections by the Owner or Engineer shall not be construed as supervision of actual construction. The Owner or Engineer is not responsible for providing a safe place of work for the Contractor, Contractor's employees, suppliers or subcontractors for access, visits, use, work, travel or occupancy by any person.

#### **1.07 CODES AND REGULATIONS**

- A. Comply with all applicable rules and regulations of the municipal laws and ordinances and latest revisions thereof. All work shall be done in full conformity with the requirements of all authorities having jurisdiction. Modifications required by the above authorities will be made without additional charges to the Owner. Where alterations to and/or deviations from the Contract Documents are required by the authorities, report the requirements to the Engineer and secure approval before work is started.
- B. Furnish and file with the proper authorities, all drawings required by them in connection with the work. Obtain all permits, licenses, and inspections and pay all legal and proper fees and charges in this connection.
- C. Should any work shown or specified be of lighter or smaller material than Code requires, same shall be executed in strict accordance with the regulations.
- D. Heavier or larger size material than Code requires shall be furnished and installed, if required by the Plans and Specifications.
- E. This Contractor shall have the electrical work inspected from time to time by authorized inspectors and shall pay all expense incurred by same. At the completion of the work, the Contractor shall furnish a Certificate of Approval, in triplicate, indicating full approval of the work furnished and installed in this Contract from the local authority having jurisdiction.
- F. Equipment and components parts thereof shall bear manufacturer's name-plate, giving manufacturer's name, size, type and model number or serial number, electrical characteristic to facilitate maintenance and replacements. Name plates of distributors or contractors are not acceptable.
- G. Engineer will have privilege of stopping any work or use of any material that in his opinion is not being properly installed and each Contractor shall remove all materials delivered, or work erected, which does not comply with Contract Drawings and Specifications, and replace with proper materials, or correct such work as directed by the Engineer, at no additional cost to Owner.
- H. If equipment or materials are installed before proper approvals have been obtained, each Contractor shall be liable for their removal and replacement including work of other trades affected by such work, at no additional cost to Owner, if such items do not meet intent of the Drawings and Specifications.

#### **1.08 RECORD DRAWINGS**

- A. The Electrical Contractor shall keep an accurate location record of all underground and concealed piping, and of all changes from the original design. He is required to furnish this information to the Engineer prior to his application for final payment.

- 
1. Submit prior to final acceptance inspection, one complete marked-up set of reproducible engineering design drawings.
    - a. Fully illustrate all revisions made by all crafts in course of work.
    - b. Include all field changes, adjustments, variances, substitutions and deletions, including all Change Orders.
    - c. Exact location of raceways, equipment and devices.
    - d. Exact size and location of underground and under floor raceways, grounding conductors and duct banks.
    - e. These drawings shall be for record purposes for Owner's use and are not considered shop drawings.
  - B. At completion of the project, all changes and deviations from the Contract Documents shall be recorded by the Contractor.
  - C. Four (4) corrected sets of all operating and maintenance instructions and complete parts lists bound in hard covers shall be furnished to the Owner.

#### **1.09 SLEEVES**

- A. Sleeves: furnished, set in Electrical Work; built-in under General Construction Work.
- B. Sleeves shall be as follows:
  1. Sleeves in floors and partitions shall be galvanized steel with lock seam joints or a manufactured conduit floor seal.
  2. Sleeves of extra heavy cast iron pipe or galvanized steel pipe shall be used in outside walls, foundations, and footing or manufactured compression-type wall seal (waterproof).
  3. Conduit sleeves shall be two (2) sizes larger than the conduit passing through it.
  4. Terminate sleeves flush with walls, partitions, and ceilings. Sleeves in floor shall terminate 1/4" above floors.
  5. Fill space between sleeve and conduit in foundation walls with oakum and caulk with lead on both sides of wall. When using pipe sleeves, fill space between sleeve and pipe with fiberglass blanket insulation when sleeve does not occur in a foundation wall.
  6. An approved fire stop seal shall be used when conduits penetrate fire stopping walls and floors (between fire zone).
- C. Set sleeves, obtain review of their locations in ample time to permit pouring of concrete or progressing of other construction work as scheduled.

#### **1.10 CLEANING CONDUIT, EQUIPMENT**

- A. Conduit, equipment: thoroughly cleaned of dirt, cuttings, other foreign substances. Should any conduit, other part of systems be stopped by any foreign matter, disconnect, clean wherever necessary for purpose of locating, removing obstructions. Repair work damaged in course of removing obstructions.

#### **1.11 VIBRATION ISOLATION**

- A. Vibration isolators shall prevent, as far as practicable, transmission of vibration, noise or hum to any part of building.
- B. Design isolators to suit vibration frequency to be absorbed; provide isolator units of area, distribution to obtain proper resiliency under machinery load, impact.
- C. Wiring and other electrical connections to equipment mounted on vibration isolators; made flexible with minimum 180 degree loop of "greenfield" in order to avoid restraining equipment and short circuiting vibration isolator.

#### **1.12 BALANCED LOAD**

- A. It is intended that design and features of the work as indicated will provide balanced load on the feeders and main service. Contractor shall provide material and installation to provide this balance load insofar as possible.
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- B. Contractor shall take current and voltage measurements at all panels of at least 1/2 hour. Reconnections of loads shall be made when deemed necessary by the Engineers.

### 1.13 JOB CONDITIONS

- A. Examine site related work and surfaces before starting work of any Section. Failure to do so shall in no way relieve the Contractor of the responsibility to properly install the new work.
1. Report to the Engineer, in writing, conditions, which will prevent proper provision of this work ten (10) days prior to bid date, in time for an addendum to be issued.
  2. Beginning work of any Section without reporting unsuitable conditions to the Engineer constitutes acceptance of conditions by the Contractor.
  3. Perform any required removal, repair or replacement of this work caused by unsuitable conditions at no additional cost to Owner.
  4. The Contractor is responsible for performing routine maintenance and cleaning of any existing equipment where he is making connections to new work and to the building where his work adds debris.
- B. Connections to existing work:
1. Install new work and connect to existing work with minimum interference to existing facilities.
  2. Provide temporary shutdowns of existing services only with written consent of Owner at no additional charges and at time not to interfere with normal operation of existing facilities.
  3. Maintain continuous operation of existing facilities as required with necessary temporary connections between new and existing work.
  4. Do not interrupt alarm and emergency systems.
  5. Connect new work to existing work in neat and acceptable manner.
  6. Restore existing disturbed work to original condition including maintenance of wiring and continuity as required. Replace damaged or rusted conduit to which new equipment is being installed and connected.
- C. Removal and relocation of existing work.
1. Disconnect, remove or relocate electrical material, equipment and other work noted and required by removal or changes in existing construction.
  2. Provide new material and equipment required for relocated equipment.
  3. Disconnect load and line end of conductors feeding existing equipment.
  4. Remove conductors from existing raceways to be rewired.
  5. Remove conductors and cap outlets on raceways to be abandoned.
  6. Cut and cap abandoned floor raceways flush with concrete floor or behind walls and ceilings.
  7. Dispose of removed raceways and wire.
  8. Dispose of removed electrical equipment as directed by Owner. The Owner shall provide a list of equipment of the Contractor of equipment to be delivered to the Owner.

### 1.14 SPECIAL TOOLS AND LOOSE ITEMS

- A. Furnish to Owner at completion of work:
1. One set of any special tools required to operate, adjust, dismantle or repair equipment furnished under any section of this Division.
  2. "Special Tools": Those not normally found in possession of mechanics or maintenance personnel.
  3. Keys
  4. Redundant components and spare parts.
- B. Deliver items to Owner and obtain receipt prior to approval of final payment.

### 1.15 REVIEW OF CONSTRUCTION

- A. Work may be reviewed at any time by representative of the Engineer.
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B. Advise Architect and Engineer that work is ready for review at following times:

1. Prior to backfilling buried work.
2. Prior to concealment of work in walls and above ceilings.
3. When all requirements of contract have been completed.

C. Neither backfill nor conceal work without Engineer's consent.

#### **1.16 SHOP DRAWING SUBMITTALS**

A. Submit required shop drawings, samples and product information in accordance with Division 1, requirements and as required in the various sections of these specifications.

B. Submittals shall show evidence of checking by the Contractor for accuracy. Product information (catalog sheets) shall indicate complete catalog number, color, accessories, etc., as well as, name of manufacturer and local distributor or manufacturer's representative.

C. Submit for review detailed coordination drawings 3/8" or larger scale plans for all major electrical equipment and any areas of conflicts by drafting location of equipment, lighting fixtures, cable trays and conduits larger than 1-1/2" trade size. Contractor shall refer to Division 1 for preparing coordination drawings.

D. Incomplete submittals will be rejected.

E. Additionally, the Contractor will submit data on the following:

1. All electrical equipment including all panelboards and switching devices (disconnects, switches, occupancy sensors, etc.).
2. Fire stop seals used for wall penetrations.
3. Any proposed variation in specified wiring plans and circuitry.
4. All special items and panels, made or constructed specifically for this project, including wiring diagrams, component layout and component data or materials list.
5. All settings of installed equipment, such as overcurrent protection, overload settings, temperature settings, time settings, etc. This includes equipment provided by other contractors or subcontractors and connected and tested by this Contractor.

F. All submittals of NON SPECIFIED equipment and components will be reviewed. It is the submitting Contractor's responsibility to prove compliance and not the Architect/Engineer to prove non-compliance. The submitting Contractor will be charged the prevailing wage of the reviewing Engineer for all submittals requiring over one (1) hour to review that were not originally specified.

G. It is the Contractor's responsibility to provide submittals in an organized and timely manner so as not to delay the project schedule and hamper the work of other trades.

#### **1.17 OPERATING INSTRUCTIONS**

A. It shall be the Contractor's responsibility to insure that the Owner's representative is given adequate instruction on the operation of all equipment prior to final payment.

#### **1.18 TEMPORARY POWER**

A. The Contractor shall provide all temporary power to all trades throughout all phases of construction throughout the duration of this project. This will include but not be limited to temporary lighting, power outlets, temporary elevator operation, controls for temporary heating, and job trailers. Contractor shall be responsible for providing temporary power via adjacent building(s) and/or a temporary diesel fired generator and associated fuel costs. Contractor shall coordinate temporary power source with project manager prior to demolition. Contractor is responsible for all costs associated with temporary power.

### **PART 2 PRODUCTS**

#### **201 MATERIALS**

A. All materials and equipment shall be new and as specified or of equal or better quality.

- B. Basic hardware and miscellaneous items shall meet existing trade standards of quality and shall carry UL or FM listings where applicable.
- C. All equipment supplied shall be the standard equipment of the manufacturer.
- D. Multiple items such as panelboards, wiring devices, switches, breakers, raceways, etc., shall be from the same manufacturer.
- E. Drawings and specifications are based on specific manufacturer's equipment. Therefore, the Contractor shall assume all responsibility, cost and coordination involved in making any necessary revisions to apply another manufacturer's equipment, even though it may be approved as an "equal" item by the Engineer.

### **PART 3 EXECUTION**

#### **301 COORDINATION OF WORK**

- A. All work shall be executed in accordance with recognized standards of workmanship. All work shall be installed in a neat and orderly manner.
- B. The Contractor shall exchange information with other Contractors and the Owner in order to insure orderly progress of the work.
- C. The Contractor must contact the Owner's representative and schedule all work ten (10) days prior to start.
- D. The Contractor shall check for possible interference before installing any items. If any work is installed, and later develops interference with other features of the design, the Contractor will be responsible to make such changes to eliminate the interference.

#### **302 CEILING REMOVAL**

- A. Existing ceilings which must be removed for the installation of new work or demolition of existing conditions shall be done by the Contractor. No ceiling shall be removed without prior approval of the Owner. Ceilings which must be removed shall be restored to their original condition as soon as practical and prior to final payment.
- B. The removed tile of lay-in type ceilings shall be stored either in the ceiling space or at a designated space in the building. No tiles shall be stored in the occupied space.
- C. The Contractor shall take all necessary precautions to prevent damage to the existing ceilings. All damaged ceilings shall be replaced with new ceiling construction to match the existing and to the Owner's satisfaction.

**END OF SECTION**

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**SECTION 260505  
SELECTIVE DEMOLITION FOR ELECTRICAL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Electrical demolition.

**1.02 RELATED REQUIREMENTS**

- A. Section 017000 - Execution and Closeout Requirements: Additional requirements for alterations work.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.

**PART 2 PRODUCTS**

**2.01 MATERIALS AND EQUIPMENT**

- A. Materials and equipment for patching and extending work: As specified in individual sections.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify field measurements and circuiting arrangements are as indicated.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition drawings are based on casual field observation and existing record documents.
- D. Report discrepancies to Architect/Engineer before disturbing existing installation.
- E. Beginning of demolition means installer accepts existing conditions.

**3.02 PREPARATION**

- A. Disconnect electrical systems in walls, floors, and ceilings to be removed.
- B. Coordinate utility service outages with utility company.
- C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- D. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration.
  - 1. Obtain permission from Owner at least 24 hours before partially or completely disabling system.
  - 2. Make temporary connections to maintain service in areas adjacent to work area.
- E. Existing Fire Alarm System: Maintain existing system in service until new system is accepted. Disable system only to make switchovers and connections. Minimize outage duration.
  - 1. Notify Owner before partially or completely disabling system.
  - 2. Make notifications at least 24 hours in advance.
  - 3. Make temporary connections to maintain service in areas adjacent to work area.

**3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK**

- A. Perform work for removal and disposal of equipment and materials containing toxic substances regulated under the Federal Toxic Substances Control Act (TSCA) in accordance with applicable federal, state, and local regulations. Applicable equipment and materials include, but are not limited to:
    - 1. PCB-containing electrical equipment, including transformers, capacitors, and switches.
    - 2. PCB- and DEHP-containing lighting ballasts.
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3. Mercury-containing lamps and tubes, including fluorescent lamps, high intensity discharge (HID), arc lamps, ultra-violet, high pressure sodium, mercury vapor, ignitron tubes, neon, and incandescent.
  - B. Remove, relocate, and extend existing installations to accommodate new construction.
  - C. Remove abandoned wiring to source of supply.
  - D. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
  - E. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.
  - F. Disconnect and remove abandoned panelboards and distribution equipment.
  - G. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
  - H. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.
  - I. Repair adjacent construction and finishes damaged during demolition and extension work.
  - J. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.
  - K. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

**304 CLEANING AND REPAIR**

- A. See Section 017419 - Construction Waste Management and Disposal for additional requirements.
- B. Clean and repair existing materials and equipment that remain or that are to be reused.
- C. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.

**END OF SECTION**

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**SECTION 260519**  
**LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES**

**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Single conductor building wire.
- B. Metal-clad cable.
- C. Wiring connectors.
- D. Electrical tape.
- E. Heat shrink tubing.
- F. Oxide inhibiting compound.
- G. Wire pulling lubricant.
- H. Cable ties.
- I. Firestop sleeves.

**1.02 RELATED REQUIREMENTS**

- A. Section 078400 - Firestopping.
- B. Section 260505 - Selective Demolition for Electrical: Disconnection, removal, and/or extension of existing electrical conductors and cables.
- C. Section 260526 - Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.
- D. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

**1.03 REFERENCE STANDARDS**

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire 2013 (Reapproved 2018).
  - B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft 2011 (Reapproved 2017).
  - C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes 2010, with Editorial Revision (2020).
  - D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation 2004 (Reapproved 2020).
  - E. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape 2017.
  - F. ASTM D4388 - Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes 2020.
  - G. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
  - H. NECA 120 - Standard for Installing Armored Cable (AC) and Type Metal-Clad (MC) Cable 2018.
  - I. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy 2021.
  - J. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems 2021.
  - K. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
  - L. UL 44 - Thermoset-Insulated Wires and Cables Current Edition, Including All Revisions.
  - M. UL 83 - Thermoplastic-Insulated Wires and Cables Current Edition, Including All Revisions.
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- N. UL 486A-486B - Wire Connectors Current Edition, Including All Revisions.
  - O. UL 486C - Splicing Wire Connectors Current Edition, Including All Revisions.
  - P. UL 486D - Sealed Wire Connector Systems Current Edition, Including All Revisions.
  - Q. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape Current Edition, Including All Revisions.
  - R. UL 1569 - Metal-Clad Cables Current Edition, Including All Revisions.

#### **1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
  - 2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
  - 3. Notify Architect/Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

#### **1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.
- C. Field Quality Control Test Reports.

#### **1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

#### **1.08 FIELD CONDITIONS**

- A. Do not install or otherwise handle thermoplastic-insulated conductors at temperatures lower than 14 degrees F, unless otherwise permitted by manufacturer's instructions. When installation below this temperature is unavoidable, notify Architect/Engineer and obtain direction before proceeding with work.

### **PART 2 PRODUCTS**

#### **2.01 CONDUCTOR AND CABLE APPLICATIONS**

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
  - B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.
  - C. Metal-clad cable is permitted only as follows:
-

1. Where not otherwise restricted, may be used:
  - a. Where concealed above accessible ceilings for final connections from junction boxes to luminaires.
  - b. Where concealed in hollow stud walls, above accessible ceilings, and under raised floors for branch circuits up to 20 A.
    - 1) Exception: Provide single conductor building wire in raceway for circuit homerun from first outlet to panelboard.

## 202 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- D. Comply with NEMA WC 70.
- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL83.
- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL44.
- G. Conductors for Grounding and Bonding: Also comply with Section 260526.
- H. Conductors and Cables Installed Exposed in Spaces Used for Environmental Air (only where specifically permitted): Plenum rated, listed and labeled as suitable for use in return air plenums.
- I. Conductor Material:
  1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
  2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
  3. Tinned Copper Conductors: Comply with ASTM B33.
- J. Minimum Conductor Size: 12 AWG.
  1. Branch Circuits: 12 AWG.
    - a. Exceptions:
      - 1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
      - 2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
- K. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- L. Conductor Color Coding:
  1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
  2. Color Coding Method: Integrally colored insulation.
    - a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
  3. Color Code:
    - a. 480Y/277 V, 3 Phase, 4 Wire System:
      - 1) Phase A: Brown.
      - 2) Phase B: Orange.
      - 3) Phase C: Yellow.
      - 4) Neutral/Grounded: Gray.
    - b. 208Y/120 V, 3 Phase, 4 Wire System:
      - 1) Phase A: Black.
      - 2) Phase B: Red.

- 3) Phase C: Blue.
- 4) Neutral/Grounded: White.
- c. 240/120 V High-Leg Delta, 3 Phase, 4 Wire System:
  - 1) Phase A: Black.
  - 2) Phase B (High-Leg): Orange.
  - 3) Phase C: Blue.
  - 4) Neutral/Grounded: White.
- d. 240/120 V, 1 Phase, 3 Wire System:
  - 1) Phase A: Black.
  - 2) Phase B: Red.
  - 3) Neutral/Grounded: White.
- e. Equipment Ground, All Systems: Green.
- f. Isolated Ground, All Systems: Green with yellow stripe.
- g. Travelers for 3-Way and 4-Way Switching: Pink.
- h. For modifications or additions to existing wiring systems, comply with existing color code when existing code complies with NFPA 70 and is approved by the authority having jurisdiction.
- i. For control circuits, comply with manufacturer's recommended color code.

### 203 SINGLE CONDUCTOR BUILDING WIRE

- A. Manufacturers:
  - 1. Copper Building Wire:
    - a. Cerro Wire LLC: [www.cerrowire.com/#sle](http://www.cerrowire.com/#sle).
    - b. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).
    - c. General Cable Technologies Corporation; [\_\_\_\_\_]: [www.generalcable.com/#sle](http://www.generalcable.com/#sle).
    - d. Service Wire Co: [www.servicewire.com/#sle](http://www.servicewire.com/#sle).
    - e. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).
- B. Description: Single conductor insulated wire.
- C. Conductor Stranding:
  - 1. Feeders and Branch Circuits:
    - a. Size 10 AWG and Smaller: Solid.
    - b. Size 8 AWG and Larger: Stranded.
  - 2. Control Circuits: Stranded.
- D. Insulation Voltage Rating: 600 V.
- E. Insulation:
  - 1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, [\_\_\_\_\_].

### 204 METAL-CLAD CABLE

- A. Manufacturers:
  - 1. AFC Cable Systems Inc: [www.afcweb.com/#sle](http://www.afcweb.com/#sle).
  - 2. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).
  - 3. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).
- B. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.
- C. Conductor Stranding:
  - 1. Size 10 AWG and Smaller: Solid.
  - 2. Size 8 AWG and Larger: Stranded.
- D. Insulation Voltage Rating: 600 V.
- E. Insulation: Type THHN, THHN/THWN, or THHN/THWN-2.
- F. Grounding: Full-size integral equipment grounding conductor.

- G. Armor: Steel, interlocked tape.

## 205 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Connectors for Grounding and Bonding: Comply with Section 260526.
- C. Wiring Connectors for Splices and Taps:
1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
  2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors or compression connectors.
- D. Wiring Connectors for Terminations:
1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
  2. Copper Conductors Size 8 AWG and Larger: Use mechanical connectors or compression connectors where connectors are required.
  3. Stranded Conductors Size 10 AWG and Smaller: Use crimped terminals for connections to terminal screws.
- E. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
1. Manufacturers:
    - a. 3M: [www.3m.com/#sle](http://www.3m.com/#sle).
    - b. Ideal Industries, Inc: [www.idealindustries.com/#sle](http://www.idealindustries.com/#sle).
    - c. NSI Industries LLC: [www.nsiindustries.com/#sle](http://www.nsiindustries.com/#sle).
- F. Push-in Wire Connectors: Rated 600 V, 221 degrees F.
1. Manufacturers:
    - a. Ideal Industries, Inc: [www.idealindustries.com/#sle](http://www.idealindustries.com/#sle).
    - b. NSI Industries LLC: [www.nsiindustries.com/#sle](http://www.nsiindustries.com/#sle).
    - c. Wago Corporation: [www.wago.us/#sle](http://www.wago.us/#sle).
- G. Mechanical Connectors: Provide bolted type or set-screw type.
1. Manufacturers:
    - a. Burndy LLC; [\_\_\_\_\_]: [www.burndy.com/#sle](http://www.burndy.com/#sle).
    - b. IlSCO: [www.ilSCO.com/#sle](http://www.ilSCO.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
- H. Compression Connectors: Provide circumferential type or hex type crimp configuration.
1. Manufacturers:
    - a. Burndy LLC; [\_\_\_\_\_]: [www.burndy.com/#sle](http://www.burndy.com/#sle).
    - b. IlSCO: [www.ilSCO.com/#sle](http://www.ilSCO.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
- I. Crimped Terminals: Nylon-insulated, with insulation grip and terminal configuration suitable for connection to be made.
1. Manufacturers:
    - a. Burndy LLC; [\_\_\_\_\_]: [www.burndy.com/#sle](http://www.burndy.com/#sle).
    - b. IlSCO: [www.ilSCO.com/#sle](http://www.ilSCO.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).

## 206 ACCESSORIES

- A. Electrical Tape:
1. Manufacturers:
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- a. 3M: [www.3m.com/#sle](http://www.3m.com/#sle).
  - b. Plymouth Rubber Europa: [www.plymouthrubber.com/#sle](http://www.plymouthrubber.com/#sle).
  2. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
  3. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.
  4. Rubber Splicing Electrical Tape: Ethylene Propylene Rubber (EPR) tape, complying with ASTM D4388; minimum thickness of 30 mil; suitable for continuous temperature environment up to 194 degrees F and short-term 266 degrees F overload service.
  5. Electrical Filler Tape: Rubber-based insulating moldable putty, minimum thickness of 125 mil; suitable for continuous temperature environment up to 176 degrees F.
  6. Moisture Sealing Electrical Tape: Insulating mastic compound laminated to flexible, all-weather vinyl backing; minimum thickness of 90 mil.
- B. Heat Shrink Tubing: Heavy-wall, split-resistant, with factory-applied adhesive; rated 600 V; suitable for direct burial applications; listed as complying with UL 486D.
- C. Oxide Inhibiting Compound: Listed; suitable for use with the conductors or cables to be installed.
1. Manufacturers:
    - a. Burndy LLC; [\_\_\_\_\_]: [www.burndy.com/#sle](http://www.burndy.com/#sle).
    - b. Ideal Industries, Inc: [www.idealindustries.com/#sle](http://www.idealindustries.com/#sle).
    - c. IlSCO: [www.ilsco.com/#sle](http://www.ilsco.com/#sle).
- D. Wire Pulling Lubricant: Listed; suitable for use with the conductors or cables to be installed and suitable for use at the installation temperature.
1. Manufacturers:
    - a. 3M: [www.3m.com/#sle](http://www.3m.com/#sle).
    - b. American Polywater Corporation: [www.polywater.com/#sle](http://www.polywater.com/#sle).
    - c. Ideal Industries, Inc: [www.idealindustries.com/#sle](http://www.idealindustries.com/#sle).
- E. Cable Ties: Material and tensile strength rating suitable for application.
1. Manufacturers:
    - a. Burndy LLC; [\_\_\_\_\_]: [www.burndy.com/#sle](http://www.burndy.com/#sle).

### **PART 3 EXECUTION**

#### **301 EXAMINATION**

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.
- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- D. Verify that field measurements are as indicated.
- E. Verify that conditions are satisfactory for installation prior to starting work.

#### **302 PREPARATION**

- A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

#### **303 INSTALLATION**

- A. Circuiting Requirements:
  1. Unless dimensioned, circuit routing indicated is diagrammatic.



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2. When circuit destination is indicated without specific routing, determine exact routing required.
  3. Arrange circuiting to minimize splices.
  4. Include circuit lengths required to install connected devices within 10 ft of location indicated.
  5. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.
  6. Maintain separation of wiring for emergency systems in accordance with NFPA 70.
  7. Circuiting Adjustments: Unless otherwise indicated, when branch circuits are indicated as separate, combining them together in a single raceway is not permitted.
  8. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among up to three single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
  9. Provide oversized neutral/grounded conductors where indicated and as specified below.
    - a. Provide 200 percent rated neutral for feeders fed from K-rated transformers.
    - b. Provide 200 percent rated neutral for feeders serving panelboards with 200 percent rated neutral bus.
- B. Install products in accordance with manufacturer's instructions.
- C. Perform work in accordance with NECA 1 (general workmanship).
- D. Install metal-clad cable (Type MC) in accordance with NECA 120.
- E. Installation in Raceway:
1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
  2. Pull all conductors and cables together into raceway at same time.
  3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
  4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- F. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- G. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
1. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conductors and cables to lay on ceiling tiles.
  2. Installation in Vertical Raceways: Provide supports where vertical rise exceeds permissible limits.
- H. Terminate cables using suitable fittings.
1. Metal-Clad Cable (Type MC):
    - a. Use listed fittings.
    - b. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.
- I. Install conductors with a minimum of 12 inches of slack at each outlet.
- J. Where conductors are installed in enclosures for future termination by others, provide a minimum of 5 feet of slack.
- K. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
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- L. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
  - M. Make wiring connections using specified wiring connectors.
    - 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
    - 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
    - 3. Do not remove conductor strands to facilitate insertion into connector.
    - 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminants. Do not use wire brush on plated connector surfaces.
    - 5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
    - 6. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
  - N. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
    - 1. Dry Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
      - a. For taped connections, first apply adequate amount of rubber splicing electrical tape or electrical filler tape, followed by outer covering of vinyl insulating electrical tape.
    - 2. Damp Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
      - a. For connections with insulating covers, apply outer covering of moisture sealing electrical tape.
      - b. For taped connections, follow same procedure as for dry locations but apply outer covering of moisture sealing electrical tape.
  - O. Insulate ends of spare conductors using vinyl insulating electrical tape.
  - P. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.
  - Q. Identify conductors and cables in accordance with Section 260553.
  - R. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 078400.
  - S. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

### **304 FIELD QUALITY CONTROL**

- A. See Section 014000 - DO NOT USE BSD Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is required for all conductors. The resistance test for parallel conductors listed as optional is not required.
- D. Correct deficiencies and replace damaged or defective conductors and cables.

**END OF SECTION**

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**SECTION 260526**  
**GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.
- D. Ground bars.
- E. Ground rod electrodes.
- F. Ground access wells.

**1.02 RELATED REQUIREMENTS**

- A. Section 260519 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
- B. Section 260536 - Cable Trays for Electrical Systems: Additional grounding and bonding requirements for cable tray systems.
- C. Section 260553 - Identification for Electrical Systems: Identification products and requirements.
- D. Section 264113 - Lightning Protection for Structures.

**1.03 REFERENCE STANDARDS**

- A. IEEE 81 - IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System 2012.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- C. NEMA GR 1 - Grounding Rod Electrodes and Grounding Rod Electrode Couplings 2017.
- D. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems 2021.
- E. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. NFPA 99 - Health Care Facilities Code 2021, with Amendment.
- G. NFPA 780 - Standard for the Installation of Lightning Protection Systems 2023.
- H. UL 467 - Grounding and Bonding Equipment Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Verify exact locations of underground metal water service pipe entrances to building.
  - 2. Coordinate the work with other trades to provide steel reinforcement complying with specified requirements for concrete-encased electrode.
  - 3. Notify Architect/Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
  - 1. Do not install ground rod electrodes until final backfill and compaction is complete.

**1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittals procedures.
  - B. Product Data: Provide manufacturer's standard catalog pages and data sheets for grounding and bonding system components.
  - C. Field quality control test reports.
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**1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications for Signal Reference Grids: Company with minimum five years documented experience with high frequency grounding systems.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

**PART 2 PRODUCTS****2.01 GROUNDING AND BONDING REQUIREMENTS**

- A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.
  - B. Do not use products for applications other than as permitted by NFPA 70 and product listing.
  - C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
  - D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
  - E. Grounding System Resistance:
    - 1. Achieve specified grounding system resistance under normally dry conditions unless otherwise approved by Architect/Engineer. Precipitation within the previous 48 hours does not constitute normally dry conditions.
    - 2. Grounding Electrode System: Not greater than 5 ohms to ground, when tested according to IEEE 81 using "fall-of-potential" method.
    - 3. Between Grounding Electrode System and Major Electrical Equipment Frames, System Neutral, and Derived Neutral Points: Not greater than 0.5 ohms, when tested using "point-to-point" methods.
  - F. Grounding Electrode System:
    - 1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
      - a. Provide continuous grounding electrode conductors without splice or joint.
      - b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.
    - 2. Metal Underground Water Pipe(s):
      - a. Provide connection to underground metal domestic and fire protection (where present) water service pipe(s) that are in direct contact with earth for at least 10 feet at an accessible location not more than 5 feet from the point of entrance to the building.
      - b. Provide bonding jumper(s) around insulating joints/pipes as required to make pipe electrically continuous.
      - c. Provide bonding jumper around water meter of sufficient length to permit removal of meter without disconnecting jumper.
    - 3. Metal In-Ground Support Structure:
      - a. Provide connection to metal in-ground support structure that is in direct contact with earth in accordance with NFPA 70.
    - 4. Concrete-Encased Electrode:
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- a. Provide connection to concrete-encased electrode consisting of not less than 20 feet of either steel reinforcing bars or bare copper conductor not smaller than 4 AWG embedded within concrete foundation or footing that is in direct contact with earth in accordance with NFPA 70.
  5. Ground Ring:
    - a. Provide a ground ring encircling the building or structure consisting of bare copper conductor not less than 2 AWG in direct contact with earth, installed at a depth of not less than 30 inches.
    - b. Where location is not indicated, locate ground ring conductor at least 24 inches outside building perimeter foundation.
    - c. Provide connection from ground ring conductor to:
      - 1) Perimeter columns of metal building frame.
      - 2) Ground rod electrodes located as indicated.
  6. Ground Rod Electrode(s):
    - a. Provide three electrodes in an equilateral triangle configuration unless otherwise indicated or required.
    - b. Space electrodes not less than 10 feet from each other and any other ground electrode.
    - c. Where location is not indicated, locate electrode(s) at least 5 feet outside building perimeter foundation as near as possible to electrical service entrance; where possible, locate in softscape (uncovered) area.
    - d. Provide ground access well for each electrode.
  7. Provide additional ground electrode(s) as required to achieve specified grounding electrode system resistance.
  8. Ground Bar: Provide ground bar, separate from service equipment enclosure, for common connection point of grounding electrode system bonding jumpers as permitted in NFPA 70. Connect grounding electrode conductor provided for service-supplied system grounding to this ground bar.
    - a. Ground Bar Size: 1/4 by 2 by 12 inches unless otherwise indicated or required.
    - b. Where ground bar location is not indicated, locate in accessible location as near as possible to service disconnect enclosure.
    - c. Ground Bar Mounting Height: 18 inches above finished floor unless otherwise indicated.
  9. Ground Riser: Provide common grounding electrode conductor not less than 3/0 AWG for tap connections to multiple separately derived systems as permitted in NFPA 70.
  - G. Service-Supplied System Grounding:
    1. For each service disconnect, provide grounding electrode conductor to connect neutral (grounded) service conductor to grounding electrode system. Unless otherwise indicated, make connection at neutral (grounded) bus in service disconnect enclosure.
    2. For each service disconnect, provide main bonding jumper to connect neutral (grounded) bus to equipment ground bus where not factory-installed. Do not make any other connections between neutral (grounded) conductors and ground on load side of service disconnect.
  - H. Grounding for Separate Building or Structure Supplied by Feeder(s) or Branch Circuits:
    1. Provide grounding electrode system for each separate building or structure.
    2. Provide equipment grounding conductor routed with supply conductors.
    3. For each disconnecting means, provide grounding electrode conductor to connect equipment ground bus to grounding electrode system.
    4. Do not make any connections and remove any factory-installed jumpers between neutral (grounded) conductors and ground.
  - I. Separately Derived System Grounding:
    1. Separately derived systems include, but are not limited to:
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- a. Transformers (except autotransformers such as buck-boost transformers).
  - b. Uninterruptible power supplies (UPS), when configured as separately derived systems.
  - c. Generators, when neutral is switched in the transfer switch.
2. Provide grounding electrode conductor to connect derived system grounded conductor to nearest effectively grounded metal building frame. Unless otherwise indicated, make connection at neutral (grounded) bus in source enclosure.
  3. Provide bonding jumper to connect derived system grounded conductor to nearest metal building frame and nearest metal water piping in the area served by the derived system, where not already used as a grounding electrode for the derived system. Make connection at same location as grounding electrode conductor connection.
  4. Where common grounding electrode conductor ground riser is used for tap connections to multiple separately derived systems, provide bonding jumper to connect the metal building frame and metal water piping in the area served by the derived system to the common grounding electrode conductor.
  5. Outdoor Source: Where the source of the separately derived system is located outside the building or structure supplied, provide connection to grounding electrode at source in accordance with NFPA 70.
  6. Provide system bonding jumper to connect system grounded conductor to equipment ground bus. Make connection at same location as grounding electrode conductor connection. Do not make any other connections between neutral (grounded) conductors and ground on load side of separately derived system disconnect.
  7. Where the source and first disconnecting means are in separate enclosures, provide supply-side bonding jumper between source and first disconnecting means.
- J. Bonding and Equipment Grounding:
1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
  2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
  3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
  4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
  5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
  6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.
  7. Provide bonding for interior metal piping systems in accordance with NFPA 70. This includes, but is not limited to:
    - a. Metal water piping where not already effectively bonded to metal underground water pipe used as grounding electrode.
    - b. Metal gas piping.
  8. Provide bonding for interior metal air ducts.
  9. Provide bonding for metal building frame.
  10. Provide bonding and equipment grounding for pools and fountains and associated equipment in accordance with NFPA 70.
  11. Provide redundant grounding and bonding for patient care areas of health care facilities in accordance with NFPA 70 and NFPA 99.
- K. Isolated Ground System:
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1. Where isolated ground receptacles or other isolated ground connections are indicated, provide separate isolated/insulated equipment grounding conductors.
  2. Connect isolated/insulated equipment grounding conductors only to separate isolated/insulated equipment ground busses.
  3. Connect the isolated/insulated equipment grounding conductors to the solidly bonded equipment ground bus only at the service disconnect or separately derived system disconnect. Do not make any other connections between isolated ground system and normal equipment ground system on the load side of this connection.
- L. Communications Systems Grounding and Bonding:
1. Provide intersystem bonding termination at service equipment or metering equipment enclosure and at disconnecting means for any additional buildings or structures in accordance with NFPA 70.
  2. Provide bonding jumper in raceway from intersystem bonding termination to each communications room or backboard and provide ground bar for termination.
    - a. Bonding Jumper Size: 6 AWG, unless otherwise indicated or required.
    - b. Raceway Size: 3/4 inch trade size unless otherwise indicated or required.
    - c. Ground Bar Size: 1/4 by 2 by 12 inches unless otherwise indicated or required.
    - d. Ground Bar Mounting Height: 18 inches above finished floor unless otherwise indicated.
- M. Lightning Protection Systems, in Addition to Requirements of Section 264113:
1. Do not use grounding electrode dedicated for lightning protection system for component of building grounding electrode system provided under this section.
  2. Provide bonding of building grounding electrode system provided under this section and lightning protection grounding electrode system in accordance with NFPA 70 and NFPA 780.
- N. Cable Tray Systems: Also comply with Section 260536.

## **202 GROUNDING AND BONDING COMPONENTS**

- A. General Requirements:
1. Provide products listed, classified, and labeled as suitable for the purpose intended.
  2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 260526:
1. Use insulated copper conductors unless otherwise indicated.
    - a. Exceptions:
      - 1) Use bare copper conductors where installed underground in direct contact with earth.
      - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- C. Connectors for Grounding and Bonding:
1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
  2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
  3. Unless otherwise indicated, use mechanical connectors or exothermic welded connections for accessible connections.
    - a. Exceptions:
      - 1) Use exothermic welded connections for connections to metal building frame.
  4. Manufacturers - Mechanical and Compression Connectors:
    - a. Advanced Lightning Technology (ALT): [www.altfab.com/#sle](http://www.altfab.com/#sle).
    - b. Burndy LLC: [www.burndy.com/#sle](http://www.burndy.com/#sle).
    - c. Harger Lightning & Grounding: [www.harger.com/#sle](http://www.harger.com/#sle).
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- d. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
5. Manufacturers - Exothermic Welded Connections:
  - a. Burndy LLC: [www.burndy.com/#sle](http://www.burndy.com/#sle).
  - b. Cadweld, a brand of Erico International Corporation: [www.erico.com/#sle](http://www.erico.com/#sle).
  - c. thermOweld, subsidiary of Continental Industries; division of Burndy LLC: [www.thermoweld.com/#sle](http://www.thermoweld.com/#sle).
- D. Ground Bars:
  1. Description: Copper rectangular ground bars with mounting brackets and insulators.
  2. Size: As indicated.
  3. Holes for Connections: 9/32-inch holes spaced 1-1/8" apart..
  4. Manufacturers:
    - a. Advanced Lightning Technology (ALT): [www.altfab.com/#sle](http://www.altfab.com/#sle).
    - b. Erico International Corporation: [www.erico.com/#sle](http://www.erico.com/#sle).
    - c. Harger Lightning & Grounding: [www.harger.com/#sle](http://www.harger.com/#sle).
    - d. thermOweld, subsidiary of Continental Industries; division of Burndy LLC: [www.thermoweld.com/#sle](http://www.thermoweld.com/#sle).
- E. Ground Rod Electrodes:
  1. Comply with NEMA GR 1.
  2. Material: Copper-bonded (copper-clad) steel.
  3. Size: 5/8 inch diameter by 10 feet length, unless otherwise indicated.
  4. Manufacturers:
    - a. Advanced Lightning Technology (ALT); [\_\_\_\_\_]: [www.altfab.com/#sle](http://www.altfab.com/#sle).
    - b. Erico International Corporation; [\_\_\_\_\_]: [www.erico.com/#sle](http://www.erico.com/#sle).
    - c. Galvan Industries, Inc; [\_\_\_\_\_]: [www.galvanelectrical.com/#sle](http://www.galvanelectrical.com/#sle).
    - d. Harger Lightning & Grounding; [\_\_\_\_\_]: [www.harger.com/#sle](http://www.harger.com/#sle).
- F. Ground Access Wells:
  1. Description: Open bottom round or rectangular well with access cover for testing and inspection; suitable for the expected load at the installed location.
  2. Size: As required to provide adequate access for testing and inspection, but not less than minimum size requirements specified.
  3. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 10 inches.
  4. Cover: Factory-identified by permanent means with word "GROUND".
  5. Manufacturers:
    - a. Advanced Lightning Technology (ALT); [\_\_\_\_\_]: [www.altfab.com/#sle](http://www.altfab.com/#sle).
    - b. Erico International Corporation; [\_\_\_\_\_]: [www.erico.com/#sle](http://www.erico.com/#sle).
    - c. Harger Lightning & Grounding; [\_\_\_\_\_]: [www.harger.com/#sle](http://www.harger.com/#sle).
    - d. thermOweld, subsidiary of Continental Industries; division of Burndy LLC; [\_\_\_\_\_]: [www.thermoweld.com/#sle](http://www.thermoweld.com/#sle).

### **PART 3 EXECUTION**

#### **301 EXAMINATION**

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as indicated.
- C. Verify that conditions are satisfactory for installation prior to starting work.

#### **302 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).



- C. Ground Rod Electrodes: Unless otherwise indicated, install ground rod electrodes vertically. Where encountered rock prohibits vertical installation, install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70.
  - 1. Outdoor Installations: Unless otherwise indicated, install with top of rod 6 inches below finished grade.
- D. Make grounding and bonding connections using specified connectors.
  - 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
  - 2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
  - 3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
  - 4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
  - 5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- E. Identify grounding and bonding system components in accordance with Section 260553.

**303 FIELD QUALITY CONTROL**

- A. See Section 014000 - DO NOT USE BSD Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.13.
- D. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.
- E. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

**END OF SECTION**

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**SECTION 260529**  
**HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

**1.02 RELATED REQUIREMENTS**

- A. Section 033000 - Cast-in-Place Concrete: Concrete equipment pads.
- B. Section 260533.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.
- C. Section 260533.16 - Boxes for Electrical Systems: Additional support and attachment requirements for boxes.
- D. Section 265100 - Interior Lighting: Additional support and attachment requirements for interior luminaires.

**1.03 REFERENCE STANDARDS**

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel 2019.
- D. MFMA-4 - Metal Framing Standards Publication 2004.
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate sizes and arrangement of supports and bases with the actual equipment and components to be installed.
  - 2. Coordinate the work with other trades to provide additional framing and materials required for installation.
  - 3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
  - 4. Coordinate the arrangement of supports with ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
  - 5. Notify Architect/Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
  - 1. Do not install products on or provide attachment to concrete surfaces until concrete has fully cured in accordance with Section 033000.

**1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
  - B. Product Data: Provide manufacturer's standard catalog pages and data sheets for channel (strut) framing systems, non-penetrating rooftop supports, and post-installed concrete and masonry anchors.
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**1.06 QUALITY ASSURANCE**

- A. Comply with NFPA 70.
- B. Comply with applicable building code.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

**PART 2 PRODUCTS****2.01 SUPPORT AND ATTACHMENT COMPONENTS**

- A. General Requirements:
  - 1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
  - 2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
  - 3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported at 5 times the applied force. Include consideration for vibration, equipment operation, and shock loads where applicable.
  - 4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
  - 5. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
    - a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
    - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
    - c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
    - d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
  - 1. Conduit Straps: One-hole or two-hole type; steel.
  - 2. Conduit Clamps: Bolted type unless otherwise indicated.
  - 3. Manufacturers:
    - a. Cooper Crouse-Hinds, a division of Eaton Corporation: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
    - b. Erico International Corporation: [www.erico.com/#sle](http://www.erico.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
- C. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.
  - 1. Manufacturers:
    - a. Cooper Crouse-Hinds, a division of Eaton Corporation: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
    - b. Erico International Corporation: [www.erico.com/#sle](http://www.erico.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
- D. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
  - 1. Comply with MFMA-4.
  - 2. Manufacturers:
    - a. Cooper B-Line, a division of Eaton Corporation; [\_\_\_\_\_]: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).

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- b. Thomas & Betts Corporation; [\_\_\_\_\_]: [www.tnb.com/#sle](http://www.tnb.com/#sle).
  - c. Unistrut, a brand of Atkore International Inc; [\_\_\_\_\_]: [www.unistrut.com/#sle](http://www.unistrut.com/#sle).
  - d. Substitutions: See Section 016000 - Product Requirements.
  - e. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
- E. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
- 1. Minimum Size, Unless Otherwise Indicated or Required:
    - a. Equipment Supports: 1/2 inch diameter.
    - b. Busway Supports: 1/2 inch diameter.
    - c. Single Conduit up to 1 inch (27 mm) trade size: 1/4 inch diameter.
    - d. Single Conduit larger than 1 inch (27 mm) trade size: 3/8 inch diameter.
    - e. Trapeze Support for Multiple Conduits: 3/8 inch diameter.
    - f. Outlet Boxes: 1/4 inch diameter.
    - g. Luminaires: 1/4 inch diameter.
- F. Anchors and Fasteners:
- 1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
  - 2. Concrete: Use preset concrete inserts or expansion anchors.
  - 3. Solid or Grout-Filled Masonry: Use expansion anchors.
  - 4. Hollow Masonry: Use toggle bolts.
  - 5. Hollow Stud Walls: Use toggle bolts.
  - 6. Steel: Use beam clamps, machine bolts, or welded threaded studs.
  - 7. Sheet Metal: Use sheet metal screws.
  - 8. Plastic and lead anchors are not permitted.
  - 9. Preset Concrete Inserts: Continuous metal channel (strut) and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
    - a. Channel Material: Use galvanized steel.
    - b. Manufacturer: Same as manufacturer of metal channel (strut) framing system.

## **PART 3 EXECUTION**

### **301 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive support and attachment components.
- C. Verify that conditions are satisfactory for installation prior to starting work.

### **302 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
  - B. Perform work in accordance with NECA 1 (general workmanship).
  - C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
  - D. Unless specifically indicated or approved by Architect/Engineer, do not provide support from suspended ceiling support system or ceiling grid.
  - E. Unless specifically indicated or approved by Architect/Engineer, do not provide support from roof deck.
  - F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
  - G. Equipment Support and Attachment:
    - 1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
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2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
  3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
  4. Unless otherwise indicated, mount floor-mounted equipment on properly sized 4 inch high concrete pad constructed in accordance with Section 033000.
  5. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
- H. Conduit Support and Attachment: Also comply with Section 260533.13.
- I. Box Support and Attachment: Also comply with Section 260533.16.
- J. Interior Luminaire Support and Attachment: Also comply with Section 265100.
- K. Preset Concrete Inserts: Use manufacturer provided closure strips to inhibit concrete seepage during concrete pour.
- L. Secure fasteners according to manufacturer's recommended torque settings.
- M. Remove temporary supports.

**3.03 FIELD QUALITY CONTROL**

- A. See Section 014000 - DO NOT USE BSD Quality Requirements, for additional requirements.
- B. Inspect support and attachment components for damage and defects.
- C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- D. Correct deficiencies and replace damaged or defective support and attachment components.

**END OF SECTION**

**SECTION 260533.13**  
**CONDUIT FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Galvanized steel rigid metal conduit (RMC).
- B. Intermediate metal conduit (IMC).
- C. Flexible metal conduit (FMC).
- D. Liquidtight flexible metal conduit (LFMC).
- E. Electrical metallic tubing (EMT).
- F. Rigid polyvinyl chloride (PVC) conduit.
- G. Liquidtight flexible nonmetallic conduit (LFNC).
- H. Conduit fittings.
- I. Accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 260526 - Grounding and Bonding for Electrical Systems.
  - 1. Includes additional requirements for fittings for grounding and bonding.
- B. Section 260529 - Hangers and Supports for Electrical Systems.
- C. Section 260548 - Vibration and Seismic Controls for Electrical Systems.
- D. Section 260553 - Identification for Electrical Systems: Identification products and requirements.
- E. Section 262100 - Low-Voltage Electrical Service Entrance: Additional requirements for electrical service conduits.

**1.03 REFERENCE STANDARDS**

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC)2020.
  - B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S)2020.
  - C. ANSI C80.6 - American National Standard for Electrical Intermediate Metal Conduit 2018.
  - D. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
  - E. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT) 2020.
  - F. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC) 2017.
  - G. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable 2014.
  - H. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit 2020.
  - I. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing 2021.
  - J. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
  - K. UL 1 - Flexible Metal Conduit Current Edition, Including All Revisions.
  - L. UL 6 - Electrical Rigid Metal Conduit-Steel Current Edition, Including All Revisions.
  - M. UL 360 - Liquid-Tight Flexible Metal Conduit Current Edition, Including All Revisions.
  - N. UL 514B - Conduit, Tubing, and Cable Fittings Current Edition, Including All Revisions.
  - O. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings Current Edition, Including All Revisions.
  - P. UL 797 - Electrical Metallic Tubing-Steel Current Edition, Including All Revisions.
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- Q. UL 1203 - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations Current Edition, Including All Revisions.
- R. UL 1242 - Electrical Intermediate Metal Conduit-Steel Current Edition, Including All Revisions.
- S. UL 1660 - Liquid-Tight Flexible Nonmetallic Conduit Current Edition, Including All Revisions.

#### **1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate minimum sizes of conduits with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
  - 2. Coordinate the arrangement of conduits with structural members, ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
  - 3. Verify exact conduit termination locations required for boxes, enclosures, and equipment installed under other sections or by others.
  - 4. Coordinate the work with other trades to provide roof penetrations that preserve the integrity of the roofing system and do not void the roof warranty.
  - 5. Notify Architect/Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
  - 1. Do not begin installation of conductors and cables until installation of conduit is complete between outlet, junction and splicing points.

#### **1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittals procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.
- C. Shop Drawings:
  - 1. Include proposed locations of roof penetrations and proposed methods for sealing.

#### **1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.

### **PART 2 PRODUCTS**

#### **201 CONDUIT APPLICATIONS**

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.
  - B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.
  - C. Underground:
    - 1. Under Slab on Grade: Use rigid PVC conduit.
    - 2. Exterior, Direct-Buried: Use rigid PVC conduit.
    - 3. Exterior, Embedded Within Concrete: Use galvanized steel rigid metal conduit or rigid PVC conduit.
    - 4. Where rigid polyvinyl (PVC) conduit is provided, transition to galvanized steel rigid metal conduit where emerging from underground.
    - 5. Where rigid polyvinyl (PVC) conduit larger than 2 inch (53 mm) trade size is provided, use galvanized steel rigid metal conduit elbows for bends.
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- D. Concealed Within Hollow Stud Walls: Use intermediate metal conduit (IMC) or electrical metallic tubing (EMT).
- E. Concealed Above Accessible Ceilings: Use intermediate metal conduit (IMC) or electrical metallic tubing (EMT).
- F. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit.
- G. Exposed, Interior, Not Subject to Physical Damage: Use electrical metallic tubing (EMT).
- H. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit.
- I. Exposed, Exterior: Use galvanized steel rigid metal conduit.
- J. Concealed, Exterior, Not Embedded in Concrete or in Contact With Earth: Use galvanized steel rigid metal conduit.
- K. Hazardous (Classified) Locations: Use galvanized steel rigid metal conduit.
- L. Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit.
  - 1. Maximum Length: 6 feet.
- M. Connections to Vibrating Equipment:
  - 1. Dry Locations: Use flexible metal conduit.
  - 2. Damp, Wet, or Corrosive Locations: Use liquidtight flexible metal conduit.
  - 3. Maximum Length: 6 feet unless otherwise indicated.
  - 4. Vibrating equipment includes, but is not limited to:
    - a. Transformers.
    - b. Motors.
- N. Fished in Existing Non-Accessible Walls, Where Necessary: Use flexible metal conduit.

## **202 CONDUIT REQUIREMENTS**

- A. Existing Work: Where existing conduits are indicated to be reused, they may be reused only where they comply with specified requirements, are free from corrosion, and integrity is verified by pulling a mandrel through them.
- B. Electrical Service Conduits: Also comply with Section 262100.
- C. Fittings for Grounding and Bonding: Also comply with Section 260526.
- D. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.
- E. Provide products listed, classified, and labeled as suitable for the purpose intended.
- F. Minimum Conduit Size, Unless Otherwise Indicated:
  - 1. Branch Circuits: 3/4 inch (21 mm) trade size.
  - 2. Branch Circuit Homeruns: 3/4 inch (21 mm) trade size.
  - 3. Control Circuits: 1/2 inch (16 mm) trade size.
  - 4. Flexible Connections to Luminaires: 1/2 inch (16 mm) trade size.
  - 5. Underground, Interior: 3/4 inch (21 mm) trade size.
  - 6. Underground, Exterior: 1 inch (27 mm) trade size.
- G. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

## **203 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)**

- A. Manufacturers:
    - 1. Allied Tube & Conduit, a division of Atkore International: [www.alliedeg.com/#sle](http://www.alliedeg.com/#sle).
    - 2. Nucor Tubular Products: [www.nucortubular.com/#sle](http://www.nucortubular.com/#sle).
    - 3. Western Tube, a division of Zekelman Industries: [www.westerntube.com/#sle](http://www.westerntube.com/#sle).
    - 4. Wheatland Tube, a division of Zekelman Industries: [www.wheatland.com/#sle](http://www.wheatland.com/#sle).
    - 5. Substitutions: See Section 016000 - Product Requirements.
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- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
- C. Fittings:
  - 1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
    - d. Substitutions: See Section 016000 - Product Requirements.
  - 2. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  - 3. Hazardous (Classified) Locations: Use fittings listed and labeled as complying with UL 1203 for the classification of the installed location.
  - 4. Material: Use steel.
  - 5. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

#### **204 INTERMEDIATE METAL CONDUIT (IMC)**

- A. Manufacturers:
  - 1. Allied Tube & Conduit, a division of Atkore International: [www.alliedeg.com/#sle](http://www.alliedeg.com/#sle).
  - 2. Nucor Tubular Products: [www.nucortubular.com/#sle](http://www.nucortubular.com/#sle).
  - 3. Western Tube, a division of Zekelman Industries: [www.westerntube.com/#sle](http://www.westerntube.com/#sle).
  - 4. Wheatland Tube, a division of Zekelman Industries: [www.wheatland.com/#sle](http://www.wheatland.com/#sle).
- B. Description: NFPA 70, Type IMC galvanized steel intermediate metal conduit complying with ANSI C80.6 and listed and labeled as complying with UL 1242.
- C. Fittings:
  - 1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
  - 2. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  - 3. Material: Use steel or malleable iron.
  - 4. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

#### **205 FLEXIBLE METAL CONDUIT (FMC)**

- A. Manufacturers:
  - 1. AFC Cable Systems, Inc: [www.afcweb.com/#sle](http://www.afcweb.com/#sle).
  - 2. Electri-Flex Company: [www.electriflex.com/#sle](http://www.electriflex.com/#sle).
  - 3. International Metal Hose: [www.metalhose.com/#sle](http://www.metalhose.com/#sle).
  - 4. Substitutions: See Section 016000 - Product Requirements.
- B. Description: NFPA 70, Type FMC standard wall steel flexible metal conduit listed and labeled as complying with UL 1, and listed for use in classified firestop systems to be used.
- C. Fittings:
  - 1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
  - 2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  - 3. Material: Use steel or malleable iron.

## **206 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)**

- A. Manufacturers:
  - 1. AFC Cable Systems, Inc: [www.afcweb.com/#sle](http://www.afcweb.com/#sle).
  - 2. Electri-Flex Company: [www.electriflex.com/#sle](http://www.electriflex.com/#sle).
  - 3. International Metal Hose: [www.metalhose.com/#sle](http://www.metalhose.com/#sle).
  - 4. Substitutions: See Section 016000 - Product Requirements.
- B. Description: NFPA 70, Type LFMC polyvinyl chloride (PVC) jacketed steel flexible metal conduit listed and labeled as complying with UL 360.
- C. Fittings:
  - 1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
    - d. Substitutions: See Section 016000 - Product Requirements.
  - 2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  - 3. Material: Use steel or malleable iron.

## **207 ELECTRICAL METALLIC TUBING (EMT)**

- A. Manufacturers:
  - 1. Allied Tube & Conduit, a division of Atkore International: [www.alliedeg.com/#sle](http://www.alliedeg.com/#sle).
  - 2. Nucor Tubular Products: [www.nucortubular/#sle](http://www.nucortubular/#sle).
  - 3. Western Tube, a division of Zekelman Industries: [www.westerntube.com/#sle](http://www.westerntube.com/#sle).
  - 4. Wheatland Tube, a division of Zekelman Industries: [www.wheatland.com/#sle](http://www.wheatland.com/#sle).
  - 5. Substitutions: See Section 016000 - Product Requirements.
- B. Description: NFPA 70, Type EMT steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
- C. Fittings:
  - 1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
    - d. Substitutions: See Section 016000 - Product Requirements.
  - 2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  - 3. Material: Use steel.
  - 4. Connectors and Couplings: Use set-screw type.
    - a. Do not use indenter type connectors and couplings.
  - 5. Damp or Wet Locations (where permitted): Use fittings listed for use in wet locations.
  - 6. Embedded Within Concrete (where permitted): Use fittings listed as concrete-tight. Fittings that require taping to be concrete-tight are acceptable.

## **208 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT**

- A. Manufacturers:
    - 1. Cantex Inc: [www.cantexinc.com/#sle](http://www.cantexinc.com/#sle).
    - 2. Carlon, a brand of Thomas & Betts Corporation: [www.carlon.com/#sle](http://www.carlon.com/#sle).
    - 3. JM Eagle: [www.jmeagle.com/#sle](http://www.jmeagle.com/#sle).
    - 4. Substitutions: See Section 016000 - Product Requirements.
  - B. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.
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- C. Fittings:
  - 1. Manufacturer: Same as manufacturer of conduit to be connected.
  - 2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

## **209 LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT (LFNC)**

- A. Manufacturers:
  - 1. AFC Cable Systems, Inc: [www.afcweb.com/#sle](http://www.afcweb.com/#sle).
  - 2. Electri-Flex Company: [www.electriflex.com/#sle](http://www.electriflex.com/#sle).
  - 3. International Metal Hose: [www.metalhose.com/#sle](http://www.metalhose.com/#sle).
  - 4. Substitutions: See Section 016000 - Product Requirements.
- B. Description: NFPA 70, Type LFNC liquidtight flexible nonmetallic conduit listed and labeled as complying with UL 1660.
- C. Fittings:
  - 1. Manufacturer: Same as manufacturer of conduit to be connected.
  - 2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B; suitable for the type of conduit to be connected.

## **210 ACCESSORIES**

- A. Corrosion Protection Tape: PVC-based, minimum thickness of 20 mil.
- B. Conduit Joint Compound: Corrosion-resistant, electrically conductive; suitable for use with the conduit to be installed.
- C. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
- D. Pull Strings: Use nylon cord with average breaking strength of not less than 200 pound-force.
- E. Sealing Compound for Sealing Fittings: Listed for use with the particular fittings to be installed.
- F. Modular Seals for Conduit Penetrations: Rated for minimum of 40 psig; Suitable for the conduits to be installed.
- G. Sealing Systems for Roof Penetrations: Premanufactured components and accessories as required to preserve integrity of roofing system and maintain roof warranty; suitable for conduits and roofing system to be installed; designed to accommodate existing penetrations where applicable.
- H. Flashing Panels for Exterior Wall Penetrations: Premanufactured components and accessories as required to preserve integrity of building envelope; suitable for conduits and facade materials to be installed.
- I. Firestop Sleeves: Listed; provide as required to preserve fire resistance rating of building elements.
  - 1. Products:
    - a. HoldRite, a brand of Reliance Worldwide Corporation; HydroFlame Pro Series/HydroFlame Custom Built: [www.holdrite.com/#sle](http://www.holdrite.com/#sle).
- J. Duct Bank Spacers: Nonmetallic; designed for maintaining conduit/duct spacing for concrete encasement in open trench installation; suitable for the conduit/duct arrangement to be installed.

## **PART 3 EXECUTION**

### **301 EXAMINATION**

- A. Verify that field measurements are as indicated.
  - B. Verify that mounting surfaces are ready to receive conduits.
  - C. Verify that conditions are satisfactory for installation prior to starting work.
-

### 302 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
  - B. Perform work in accordance with NECA 1 (general workmanship).
  - C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.
  - D. Install intermediate metal conduit (IMC) in accordance with NECA 101.
  - E. Install rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.
  - F. Install liquidtight flexible nonmetallic conduit (LFNC) in accordance with NECA 111.
  - G. Conduit Routing:
    - 1. Unless dimensioned, conduit routing indicated is diagrammatic.
    - 2. When conduit destination is indicated without specific routing, determine exact routing required.
    - 3. Conceal all conduits unless specifically indicated to be exposed.
    - 4. Conduits in the following areas may be exposed, unless otherwise indicated:
      - a. Electrical rooms.
      - b. Mechanical equipment rooms.
      - c. Within joists in areas with no ceiling.
    - 5. Unless otherwise approved or indicated on associated documents, do not route conduits exposed:
      - a. Across floors.
      - b. Across roofs.
      - c. Across top of parapet walls.
      - d. Across building exterior surfaces.
    - 6. Conduits installed underground or embedded in concrete may be routed in the shortest possible manner unless otherwise indicated. Route all other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
    - 7. Conduits run within slab on deck applications are NOT acceptable.
    - 8. Arrange conduit to maintain adequate headroom, clearances, and access.
    - 9. Arrange conduit to provide no more than the equivalent of three 90 degree bends between pull points.
    - 10. Arrange conduit to provide no more than 150 feet between pull points.
    - 11. Route conduits above water and drain piping where possible.
    - 12. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
    - 13. Maintain minimum clearance of 12 inches between conduits and hot surfaces. This includes, but is not limited to:
      - a. Heaters.
      - b. Hot water piping.
      - c. Flues.
  - H. Conduit Support:
    - 1. Secure and support conduits in accordance with NFPA 70 and Section 260529 using suitable supports and methods approved by the authority having jurisdiction.
    - 2. Provide required vibration isolation and/or seismic controls in accordance with Section 260548.
    - 3. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
    - 4. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
    - 5. Use metal channel (strut) with accessory conduit clamps to support multiple parallel surface-mounted conduits.
    - 6. Use conduit clamp to support single conduit from beam clamp or threaded rod.
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7. Use trapeze hangers assembled from threaded rods and metal channel (strut) with accessory conduit clamps to support multiple parallel suspended conduits.
  8. Use non-penetrating rooftop supports to support conduits routed across rooftops (only where approved).
  9. Use of spring steel conduit clips for support of conduits is not permitted.
  10. Use of wire for support of conduits is not permitted.
  11. Where conduit support intervals specified in NFPA 70 and NECA standards differ, comply with the most stringent requirements.
- I. Connections and Terminations:
1. Use approved conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
  2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
  3. Use suitable adapters where required to transition from one type of conduit to another.
  4. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
  5. Terminate threaded conduits in boxes and enclosures using threaded hubs for dry locations and raintight hubs for wet locations.
  6. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
  7. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
- J. Penetrations:
1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
  2. Make penetrations perpendicular to surfaces unless otherwise indicated.
  3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
  4. Conceal bends for conduit risers emerging above ground.
  5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
  6. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
  7. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
  8. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 078400.
- K. Underground Installation:
1. Provide trenching and backfilling in accordance with Section 312316.13.
  2. Minimum Cover, Unless Otherwise Indicated or Required:
    - a. Underground, Exterior: 24 inches.
    - b. Under Slab on Grade: 12 inches to bottom of slab.
  3. Provide underground warning tape in accordance with Section 260553 along entire conduit length for service entrance where not concrete-encased.
- L. Concrete Encasement: Where conduits not otherwise embedded within concrete are indicated to be concrete-encased, provide concrete in accordance with Section 033000 with minimum concrete cover of 3 inches on all sides unless otherwise indicated.
- M. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected
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equipment. This includes, but is not limited to:

1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
  2. Where calculated in accordance with NFPA 70 for rigid polyvinyl chloride (PVC) conduit installed above ground to compensate for thermal expansion and contraction.
  3. Where conduits are subject to earth movement by settlement or frost.
- N. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:
1. Where conduits pass from outdoors into conditioned interior spaces.
  2. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
- O. Provide pull string in all empty conduits and in conduits where conductors and cables are to be installed by others. Leave minimum slack of 12 inches at each end.
- P. Provide grounding and bonding in accordance with Section 260526.
- Q. Identify conduits in accordance with Section 260553.

**303 FIELD QUALITY CONTROL**

- A. See Section 014000 - DO NOT USE BSD Quality Requirements, for additional requirements.
- B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- C. Correct deficiencies and replace damaged or defective conduits.

**304 CLEANING**

- A. Clean interior of conduits to remove moisture and foreign matter.

**305 PROTECTION**

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

**END OF SECTION**

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**SECTION 260533.16**  
**BOXES FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.
- C. Underground boxes/enclosures.

**1.02 RELATED REQUIREMENTS**

- A. Section 033000 - Cast-in-Place Concrete.
- B. Section 083100 - Access Doors and Panels: Panels for maintaining access to concealed boxes.
- C. Section 260526 - Grounding and Bonding for Electrical Systems.
- D. Section 260529 - Hangers and Supports for Electrical Systems.
- E. Section 260533.13 - Conduit for Electrical Systems:
  - 1. Conduit bodies and other fittings.
  - 2. Additional requirements for locating boxes to limit conduit length and/or number of bends between pulling points.
- F. Section 260553 - Identification for Electrical Systems: Identification products and requirements.
- G. Section 262726 - Wiring Devices:
  - 1. Wall plates.
  - 2. Additional requirements for locating boxes for wiring devices.
- H. Section 271000 - Structured Cabling: Additional requirements for communications systems outlet boxes.

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
  - B. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2016.
  - C. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable 2014.
  - D. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports 2013 (Reaffirmed 2020).
  - E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.
  - F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
  - G. SCTE 77 - Specifications for Underground Enclosure Integrity 2017.
  - H. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations Current Edition, Including All Revisions.
  - I. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations Current Edition, Including All Revisions.
  - J. UL 508A - Industrial Control Panels Current Edition, Including All Revisions.
  - K. UL 514A - Metallic Outlet Boxes Current Edition, Including All Revisions.
  - L. UL 514C - Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers Current Edition, Including All Revisions.
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#### **1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
  - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
  - 3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
  - 4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
  - 5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
  - 6. Coordinate the work with other trades to preserve insulation integrity.
  - 7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
  - 8. Notify Architect/Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

#### **1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for cabinets and enclosures, boxes for hazardous (classified) locations, floor boxes, and underground boxes/enclosures.
- C. Samples:
- D. Project Record Documents: Record actual locations for pull boxes, cabinets and enclosures, floor boxes, and underground boxes/enclosures.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 016000 - Product Requirements, for additional provisions.
  - 2. Keys for Lockable Enclosures: Two of each different key.

#### **1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

### **PART 2 PRODUCTS**

#### **2.01 BOXES**

- A. General Requirements:
    - 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
    - 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
    - 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
    - 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
    - 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
  - B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
    - 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
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2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
  3. Use cast iron boxes or cast aluminum boxes where exposed galvanized steel rigid metal conduit is used.
  4. Use nonmetallic boxes where exposed rigid PVC conduit is used.
  5. Use suitable concrete type boxes where flush-mounted in concrete.
  6. Use suitable masonry type boxes where flush-mounted in masonry walls.
  7. Use raised covers suitable for the type of wall construction and device configuration where required.
  8. Use shallow boxes where required by the type of wall construction.
  9. Do not use "through-wall" boxes designed for access from both sides of wall.
  10. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
  11. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
  12. Nonmetallic Boxes: Comply with NEMA OS 2, and list and label as complying with UL 514C.
  13. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
  14. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
  15. Minimum Box Size, Unless Otherwise Indicated:
    - a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch by 2-1/8 inches by 2-1/8 inches deep unless otherwise noted.
    - b. Communications Systems Outlets: 4 inch square by 2-1/8 inch (100 by 54 mm) trade size.
    - c. Ceiling Outlets: 4 inch octagonal or square by 1-1/2 inch deep (100 by 38 mm) trade size.
  16. Wall Plates: Comply with Section 262726.
  17. Manufacturers:
    - a. Hubbell Incorporated; Bell Products; [\_\_\_\_\_]: [www.hubbell-rtb.com/#sle](http://www.hubbell-rtb.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co; [\_\_\_\_\_]: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation; [\_\_\_\_\_]: [www.tnb.com/#sle](http://www.tnb.com/#sle).
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
  2. NEMA 250 Environment Type, Unless Otherwise Indicated:
    - a. Indoor Clean, Dry Locations: Type 1, painted steel.
    - b. Outdoor Locations: Type 3R, painted steel.
  3. Junction and Pull Boxes Larger Than 100 cubic inches:
    - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
    - b. Boxes 6 square feet and Larger: Provide hinged-cover enclosures.
  4. Cabinets and Hinged-Cover Enclosures, Other Than Junction and Pull Boxes:
    - a. Provide lockable hinged covers, all locks keyed alike unless otherwise indicated.
  5. Finish for Painted Steel Enclosures: Manufacturer's standard grey unless otherwise indicated.
  6. Manufacturers:
    - a. Cooper B-Line, a division of Eaton Corporation; [\_\_\_\_\_]: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
    - b. Hoffman, a brand of Pentair Technical Products; [\_\_\_\_\_]: [www.hoffmanonline.com/#sle](http://www.hoffmanonline.com/#sle).
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- c. Hubbell Incorporated; Wiegmann Products; [\_\_\_\_\_]: [www.hubbell-wiegmann.com/#sle](http://www.hubbell-wiegmann.com/#sle).
- D. Underground Boxes/Enclosures:
  - 1. Description: In-ground, open bottom boxes furnished with flush, non-skid covers with legend indicating type of service and stainless steel tamper resistant cover bolts.
  - 2. Size: As indicated on drawings.
  - 3. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 12 inches.
  - 4. Provide logo on cover to indicate type of service.
  - 5. Applications:
    - a. Sidewalks and Landscaped Areas Subject Only to Occasional Nondeliberate Vehicular Traffic: Use polymer concrete enclosures, with minimum SCTE 77 Tier 8 load rating.
    - b. Do not use polymer concrete enclosures in areas subject to deliberate vehicular traffic.
  - 6. Polymer Concrete Underground Boxes/Enclosures: Comply with SCTE 77.
    - a. Manufacturers:
      - 1) Hubbell Incorporated; Quazite Products; [\_\_\_\_\_]: [www.hubbellpowersystems.com/#sle](http://www.hubbellpowersystems.com/#sle).
      - 2) MacLean Highline; [\_\_\_\_\_]: [www.macleanhighline.com/#sle](http://www.macleanhighline.com/#sle).
      - 3) Oldcastle Precast, Inc; [\_\_\_\_\_]: [www.oldcastleprecast.com/#sle](http://www.oldcastleprecast.com/#sle).
    - b. Combination fiberglass/polymer concrete boxes/enclosures are acceptable.
    - c. Product(s):
      - 1) MacLean Highline PHA Series: Straight wall, all-polymer concrete splice box/pull box; available Tier 8, Tier 15, and Tier 22 load ratings.

### **PART 3 EXECUTION**

#### **301 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

#### **302 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
  - B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
  - C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
  - D. Provide separate boxes for emergency power and normal power systems.
  - E. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.
  - F. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.
  - G. Unless otherwise indicated, boxes may be surface-mounted where exposed conduits are indicated or permitted.
  - H. Box Locations:
    - 1. Locate boxes to be accessible. Provide access panels in accordance with Section 083100 as required where approved by the Architect.
    - 2. Unless dimensioned, box locations indicated are approximate.
    - 3. Locate boxes as required for devices installed under other sections or by others.
      - a. Switches, Receptacles, and Other Wiring Devices: Comply with Section 262726.
      - b. Communications Systems Outlets: Comply with Section 271000.
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4. Locate boxes so that wall plates do not span different building finishes.
  5. Locate boxes so that wall plates do not cross masonry joints.
  6. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches horizontal separation unless otherwise indicated.
  7. Fire Resistance Rated Walls: Install flush-mounted boxes such that the required fire resistance will not be reduced.
    - a. Do not install flush-mounted boxes on opposite sides of walls back-to-back; provide minimum 24 inches separation where wall is constructed with individual noncommunicating stud cavities or protect both boxes with listed putty pads.
  8. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 260533.13.
- I. Box Supports:
1. Secure and support boxes in accordance with NFPA 70 and Section 260529 using suitable supports and methods approved by the authority having jurisdiction.
  2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
  3. Installation Above Suspended Ceilings: Do not provide support from ceiling grid or ceiling support system.
- J. Install boxes plumb and level.
- K. Flush-Mounted Boxes:
1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch or does not project beyond finished surface.
  2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
  3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch at the edge of the box.
- L. Floor-Mounted Cabinets: Mount on properly sized 4 inch high concrete pad constructed in accordance with Section 033000.
- M. Install boxes as required to preserve insulation integrity.
- N. Nonmetallic Floor Boxes: Cut box flush with finished floor after concrete pour.
- O. Underground Boxes/Enclosures:
1. Install enclosure on gravel base, minimum 6 inches deep.
  2. Mount enclosures located in landscaped areas with top at 1 inch above finished grade.
  3. Install additional bracing inside enclosures in accordance with manufacturer's instructions to minimize box sidewall deflections during backfilling. Backfill with cover bolted in place.
- P. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- Q. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 078400.
- R. Close unused box openings.
- S. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- T. Provide grounding and bonding in accordance with Section 260526.
- U. Identify boxes in accordance with Section 260553.
-

**3.03 CLEANING**

- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

**3.04 PROTECTION**

- A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

**END OF SECTION**

**SECTION 260553  
IDENTIFICATION FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable markers.
- D. Voltage markers.
- E. Underground warning tape.
- F. Floor marking tape.
- G. Warning signs and labels.

**1.02 RELATED REQUIREMENTS**

- A. Section 099113 - Exterior Painting.
- B. Section 099123 - Interior Painting.
- C. Section 260519 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.
- D. Section 260536 - Cable Trays for Electrical Systems: Additional identification requirements for cable tray systems.
- E. Section 260573 - Power System Studies: Arc flash hazard warning labels.
- F. Section 262300 - Low-Voltage Switchgear: Factory-installed mimic bus.
- G. Section 262726 - Wiring Devices - Lutron: Device and wallplate finishes; factory pre-marked wallplates.
- H. Section 263100 - Photovoltaic Collectors: Additional identification requirements for photovoltaic systems.
- I. Section 271000 - Structured Cabling: Identification for communications cabling and devices.

**1.03 REFERENCE STANDARDS**

- A. ANSI Z535.2 - American National Standard for Environmental and Facility Safety Signs 2011 (Reaffirmed 2017).
- B. ANSI Z535.4 - American National Standard for Product Safety Signs and Labels 2011 (Reaffirmed 2017).
- C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 969 - Marking and Labeling Systems Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Verify final designations for equipment, systems, and components to be identified prior to fabrication of identification products.
- B. Sequencing:
  - 1. Do not conceal items to be identified, in locations such as above suspended ceilings, until identification products have been installed.
  - 2. Do not install identification products until final surface finishes and painting are complete.

**1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittals procedures.
-

- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.
- C. Shop Drawings: Provide schedule of items to be identified indicating proposed designations, materials, legends, and formats.
- D. Samples:
  - 1. Identification Nameplates: One of each type and color specified.
  - 2. Warning Signs and Labels: One of each type and legend specified.

## **106 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.
- B. Adhesive-attached labeling materials, including label stocks, laminating adhesive, and inks used by label printers, shall comply with UL 969.

## **PART 2 PRODUCTS**

### **201 IDENTIFICATION REQUIREMENTS**

- A. Identification for Equipment:
  - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
    - a. Switchgear:
      - 1) Identify ampere rating.
      - 2) Identify voltage and phase.
      - 3) Identify power source and circuit number. Include location when not within sight of equipment.
      - 4) Use identification nameplate to identify main and tie devices.
      - 5) Use identification nameplate to identify load(s) served for each branch device. Identify spares and spaces.
      - 6) See Section 262300 for factory-installed mimic bus.
    - b. Switchboards:
      - 1) Identify ampere rating.
      - 2) Identify voltage and phase.
      - 3) Identify power source and circuit number. Include location when not within sight of equipment.
      - 4) Use identification nameplate to identify main overcurrent protective device.
      - 5) Use identification nameplate to identify load(s) served for each branch device. Identify spares and spaces.
    - c. Motor Control Centers:
      - 1) Identify ampere rating.
      - 2) Identify voltage and phase.
      - 3) Identify power source and circuit number. Include location when not within sight of equipment.
      - 4) Use identification nameplate to identify main overcurrent protective device.
      - 5) Use identification nameplate to identify load(s) served for each branch device. Identify spares and spaces.
    - d. Panelboards:
      - 1) Identify ampere rating.
      - 2) Identify voltage and phase.
      - 3) Identify power source and circuit number. Include location when not within sight of equipment.
      - 4) Identify main overcurrent protective device. Use identification label for panelboards with a door. For power distribution panelboards without a door, use identification nameplate.
      - 5) Use typewritten circuit directory to identify load(s) served for panelboards with a door. Identify spares and spaces.



- 6) For power panelboards without a door, use identification nameplate to identify load(s) served for each branch device. Do not identify spares and spaces.
  - e. Transformers:
    - 1) Identify kVA rating.
    - 2) Identify voltage and phase for primary and secondary.
    - 3) Identify power source and circuit number. Include location when not within sight of equipment.
  - f. Enclosed switches, circuit breakers, and motor controllers:
    - 1) Identify voltage and phase.
    - 2) Identify power source and circuit number. Include location when not within sight of equipment.
    - 3) Identify load(s) served. Include location when not within sight of equipment.
  - g. Busway:
    - 1) Identify ampere rating.
    - 2) Identify voltage and phase.
    - 3) Identify power source and circuit number. Include location when not within sight of equipment.
    - 4) Provide identification at maximum intervals of 40 feet.
    - 5) Use identification nameplate to identify load(s) served for each plug-in unit. Include location when not within sight of equipment.
  - h. Time Switches:
    - 1) Identify load(s) served and associated circuits controlled. Include location.
  - i. Enclosed Contactors:
    - 1) Identify ampere rating.
    - 2) Identify voltage and phase.
    - 3) Identify configuration, e.g., E.O.E.H. (electrically operated, electrically held) or E.O.M.H. (electrically operated, mechanically held).
    - 4) Identify coil voltage.
    - 5) Identify load(s) and associated circuits controlled. Include location.
  - j. Transfer Switches:
    - 1) Identify voltage and phase.
    - 2) Identify power source and circuit number for both normal power source and standby power source. Include location when not within sight of equipment.
    - 3) Identify load(s) served. Include location when not within sight of equipment.
    - 4) Identify short circuit current rating based on the specific overcurrent protective device type and settings protecting the transfer switch.
  - k. Electricity Meters:
    - 1) Identify load(s) metered.
  2. Service Equipment:
    - a. Use identification nameplate to identify each service disconnecting means.
    - b. For buildings or structures supplied by more than one service, or any combination of branch circuits, feeders, and services, use identification nameplate or means of identification acceptable to authority having jurisdiction at each service disconnecting means to identify all other services, feeders, and branch circuits supplying that building or structure. Verify format and descriptions with authority having jurisdiction.
  3. Emergency System Equipment:
    - a. Use identification nameplate or voltage marker to identify emergency system equipment in accordance with NFPA 70.
    - b. Use identification nameplate at each piece of service equipment to identify type and location of on-site emergency power sources.
    - c. Use identification nameplate to identify emergency operating instructions for emergency system equipment.
-

4. Use voltage marker to identify highest voltage present for each piece of electrical equipment.
  5. Use identification nameplate to identify equipment utilizing series ratings, where permitted, in accordance with NFPA 70.
  6. Use identification nameplate to identify switchboards and panelboards utilizing a high leg delta system in accordance with NFPA 70.
  7. Use identification nameplate to identify disconnect location for equipment with remote disconnecting means.
  8. Use identification label or handwritten text using indelible marker on inside of door at each fused switch to identify required NEMA fuse class and size.
  9. Use identification label or handwritten text using indelible marker on inside of door at each motor controller to identify nameplate horsepower, full load amperes, code letter, service factor, voltage, and phase of motor(s) controlled.
  10. Use identification label to identify overcurrent protective devices for branch circuits serving fire alarm circuits. Identify with text "FIRE ALARM CIRCUIT".
  11. Use field-painted floor markings, floor marking tape, or warning labels to identify required equipment working clearances where indicated or where required by the authority having jurisdiction.
    - a. Field-Painted Floor Markings: Alternating black and white stripes, 3 inches wide, painted in accordance with Section 099123 and 099113.
  12. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70 including but not limited to the following.
    - a. Service equipment.
    - b. Industrial control panels.
    - c. Motor control centers.
    - d. Elevator control panels.
    - e. Industrial machinery.
  13. Arc Flash Hazard Warning Labels: Comply with Section 260573.
  14. Use warning signs to identify electrical hazards for entrances to all rooms and other guarded locations that contain exposed live parts operating at 600 V nominal or less with the word message "DANGER; Electrical hazard; Authorized personnel only" or approved equivalent.
  15. Use warning signs to identify electrical hazards for entrances to all buildings, vaults, rooms, or enclosures containing exposed live parts or exposed conductors operating at over 600 V nominal with the word message "DANGER; HIGH VOLTAGE; KEEPOUT".
  16. Use warning labels to identify electrical hazards for equipment, compartments, and enclosures containing exposed live parts or exposed conductors operating at over 600 V nominal with the word message "DANGER; HIGH VOLTAGE; KEEP OUT".
  17. Use warning labels, identification nameplates, or identification labels to identify electrical hazards for equipment where multiple power sources are present with the word message "DANGER; Hazardous voltage; Multiple power sources may be present; Disconnect all electric power including remote disconnects before servicing" or approved equivalent.
- B. Identification for Conductors and Cables:
1. Color Coding for Power Conductors 600 V and Less: Comply with Section 260519.
  2. Identification for Communications Conductors and Cables: Comply with Section 271000.
  3. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
  4. Use wire and cable markers to identify circuit number or other designation indicated for power, control, and instrumentation conductors and cables at the following locations:
    - a. At each source and load connection.
    - b. Within boxes when more than one circuit is present.
-

- c. Within equipment enclosures when conductors and cables enter or leave the enclosure.
      - d. In cable tray, at maximum intervals of 20 feet.
    - 5. Use wire and cable markers to identify connected grounding electrode system components for grounding electrode conductors.
    - 6. Use underground warning tape to identify direct buried cables.
  - C. Identification for Raceways:
    - 1. Use voltage markers to identify highest voltage present for accessible conduits 3" high at maximum intervals of 20 feet.
    - 2. Use voltage markers or color-coded bands to identify systems other than normal power system for accessible conduits at maximum intervals of 20 feet.
      - a. Color-Coded Bands: Use field-painting or vinyl color coding electrical tape to mark bands 3 inches wide.
        - 1) Color Code:
          - (a) Emergency Power System: Red.
          - (b) Fire Alarm System: Red.
        - 2) Field-Painting: Comply with Section 099123 and 099113.
        - 3) Vinyl Color Coding Electrical Tape: Comply with Section 260519.
      - 3. Use identification labels to identify circuits enclosed for accessible conduits at wall penetrations, at floor penetrations, at roof penetrations, and at equipment terminations when source is not within sight.
      - 4. Use identification labels to identify spare conduits at each end. Identify purpose and termination location.
      - 5. Use underground warning tape to identify underground raceways.
      - 6. Use voltage markers to identify highest voltage present for wireways at maximum intervals of 20 feet.
  - D. Identification for Cable Tray: Comply with Section 260536.
  - E. Identification for Boxes:
    - 1. Use voltage markers to identify highest voltage present.
    - 2. Use voltage markers or color coded boxes to identify systems other than normal power system.
      - a. Color-Coded Boxes: Field-painted in accordance with Section 099123 and 099113 per the same color code used for raceways.
        - 1) Emergency Power System: Red.
      - b. For exposed boxes in public areas, do not color code.
    - 3. Use identification labels to identify circuits enclosed.
      - a. For exposed boxes in public areas, use only identification labels.
    - 4. Use warning labels to identify electrical hazards for boxes containing exposed live parts or exposed conductors operating at over 600 V nominal with the word message "DANGER; HIGH VOLTAGE; KEEP OUT".
  - F. Identification for Devices:
    - 1. Identification for Communications Devices: Comply with Section 271000.
    - 2. Wiring Device and Wallplate Finishes: Comply with Section 262726.
    - 3. Factory Pre-Marked Wallplates: Comply with Section 262726.
    - 4. Use identification label to identify fire alarm system devices.
      - a. For devices concealed above suspended ceilings, provide additional identification on ceiling tile below device location.
    - 5. Use identification label or engraved wallplate to identify serving branch circuit for all receptacles.
  - G. Identification for Luminaires:
    - 1. Use permanent red dot on luminaire frame to identify luminaires connected to emergency power system.
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H. Identification for Photovoltaic Systems: Comply with Section 263100

**202 IDENTIFICATION NAMEPLATES AND LABELS**

A. Identification Nameplates:

1. Materials:
  - a. Indoor Clean, Dry Locations: Use plastic nameplates.
  - b. Outdoor Locations: Use plastic, stainless steel, or aluminum nameplates suitable for exterior use.
2. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.
  - a. Exception: Provide minimum thickness of 1/8 inch when any dimension is greater than 4 inches.
3. Stainless Steel Nameplates: Minimum thickness of 1/32 inch; engraved or laser-etched text.
4. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch; engraved or laser-etched text.
5. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.

B. Identification Labels:

1. Manufacturers:
  - a. Brady Corporation; [\_\_\_\_\_]: [www.bradyid.com/#sle](http://www.bradyid.com/#sle).
  - b. Brother International Corporation: [www.brother-usa.com/#sle](http://www.brother-usa.com/#sle).
  - c. Panduit Corp: [www.panduit.com/#sle](http://www.panduit.com/#sle).
2. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
  - a. Use only for indoor locations.
3. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

C. Format for Equipment Identification:

1. Minimum Size: 1 inch by 2.5 inches.
2. Legend:
  - a. System designation where applicable:
    - 1) Emergency Power System: Identify with text "EMERGENCY".
    - 2) Fire Alarm System: Identify with text "FIRE ALARM".
  - b. Equipment designation or other approved description.
3. Text: All capitalized unless otherwise indicated.
4. Minimum Text Height:
  - a. System Designation: 1 inch.
  - b. Equipment Designation: 1/2 inch.
  - c. Other Information: 1/4 inch.
  - d. Exception: Provide minimum text height of 1 inch for equipment located more than 10 feet above floor or working platform.
5. Color:
  - a. Normal Power System: White text on black background.
  - b. Emergency Power System: White text on red background.

D. Format for General Information and Operating Instructions:

1. Minimum Size: 1 inch by 2.5 inches.
  2. Legend: Include information or instructions indicated or as required for proper and safe operation and maintenance.
  3. Text: All capitalized unless otherwise indicated.
  4. Minimum Text Height: 1/4 inch.
  5. Color: Black text on white background unless otherwise indicated.
-

- E. Format for Caution and Warning Messages:
  - 1. Minimum Size: 2 inches by 4 inches.
  - 2. Legend: Include information or instructions indicated or as required for proper and safe operation and maintenance.
  - 3. Text: All capitalized unless otherwise indicated.
  - 4. Minimum Text Height: 1/2 inch.
  - 5. Color: Black text on yellow background unless otherwise indicated.
- F. Format for Receptacle Identification:
  - 1. Minimum Size: 3/8 inch by 1.5 inches.
  - 2. Legend: Power source and circuit number or other designation indicated.
  - 3. Text: All capitalized unless otherwise indicated.
  - 4. Minimum Text Height: 3/16 inch.
  - 5. Color: Black text on white background.
- G. Format for Control Device Identification:
  - 1. Minimum Size: 3/8 inch by 1.5 inches.
  - 2. Legend: Load controlled or other designation indicated.
  - 3. Text: All capitalized unless otherwise indicated.
  - 4. Minimum Text Height: 3/16 inch.
  - 5. Color: Black text on white background.
- H. Format for Fire Alarm Device Identification:
  - 1. Minimum Size: 3/8 inch by 1.5 inches.
  - 2. Legend: Designation indicated and device zone or address.
  - 3. Text: All capitalized unless otherwise indicated.
  - 4. Minimum Text Height: 3/16 inch.
  - 5. Color: Red text on white background.

### **203 WIRE AND CABLE MARKERS**

- A. Manufacturers:
  - 1. Brady Corporation
  - 2. HellermannTyton
  - 3. Panduit Corp
  - 4. Or equal
- B. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.
- C. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.
- D. Legend: Power source and circuit number or other designation indicated.
- E. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.
  - 1. Do not use handwritten text.
- F. Minimum Text Height: 1/8 inch.
- G. Color: Black text on white background unless otherwise indicated.

### **204 VOLTAGE MARKERS**

- A. Manufacturers:
    - 1. Brady Corporation
    - 2. Brimar Industries
    - 3. Seton Identification Products
    - 4. Or equal
-

- B. Markers for Conduits: Use factory pre-printed self-adhesive vinyl, self-adhesive vinyl cloth, or vinyl snap-around type markers.
- C. Markers for Boxes and Equipment Enclosures: Use factory pre-printed self-adhesive vinyl or self-adhesive vinyl cloth type markers.
- D. Minimum Size:
  - 1. Markers for Equipment: 1 1/8 by 4 1/2 inches.
  - 2. Markers for Conduits: As recommended by manufacturer for conduit size to be identified.
  - 3. Markers for Pull Boxes: 1 1/8 by 4 1/2 inches.
  - 4. Markers for Junction Boxes: 1/2 by 2 1/4 inches.
- E. Legend:
  - 1. Markers for Voltage Identification: Highest voltage present.
  - 2. Markers for System Identification:
    - a. Emergency Power System: Text "EMERGENCY".
- F. Color: Black text on orange background unless otherwise indicated.

## **205 UNDERGROUND WARNING TAPE**

- A. Manufacturers:
  - 1. Brady Corporation
  - 2. Brimar Industries, Inc
  - 3. Seton Identification Products
  - 4. [\_\_\_\_\_].
- B. Materials: Use non-detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.
  - 1. Exception: Use foil-backed detectable type tape where required by serving utility or where directed by Owner.
- C. Non-detectable Type Tape: 6 inches wide, with minimum thickness of 4 mil.
- D. Foil-backed Detectable Type Tape: 3 inches wide, with minimum thickness of 5 mil, unless otherwise required for proper detection.
- E. Legend: Type of service, continuously repeated over full length of tape.
- F. Color:
  - 1. Tape for Buried Power Lines: Black text on red background.
  - 2. Tape for Buried Communication, Alarm, and Signal Lines: Black text on orange background.

## **206 FLOOR MARKING TAPE**

- A. Manufacturers:
  - 1. Brady Corporation
  - 2. Brimar Industries, Inc
  - 3. Insite Solutions, LLC
  - 4. Seton Identification Products
  - 5. Or Equal
- B. Floor Marking Tape for Equipment Working Clearance Identification: Self-adhesive vinyl or polyester tape with overlamine, 3 inches wide, with alternating black and white stripes. Tape not to be installed in finished spaces open to general public and staff.

## **207 WARNING SIGNS AND LABELS**

- A. Manufacturers:
    - 1. Brimar Industries, Inc: [www.brimar.com/#sle](http://www.brimar.com/#sle).
    - 2. Clarion Safety Systems, LLC; [\_\_\_\_\_]: [www.clarionsafety.com/#sle](http://www.clarionsafety.com/#sle).
    - 3. Seton Identification Products; [\_\_\_\_\_]: [www.seton.com/#sle](http://www.seton.com/#sle).
  - B. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
-

- C. Warning Signs:
  - 1. Materials:
    - a. Indoor Dry, Clean Locations: Use factory pre-printed rigid plastic or self-adhesive vinyl signs.
    - b. Outdoor Locations: Use factory pre-printed rigid aluminum signs.
  - 2. Rigid Signs: Provide four mounting holes at corners for mechanical fasteners.
  - 3. Minimum Size: 7 by 10 inches unless otherwise indicated.
- D. Warning Labels:
  - 1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
    - a. Do not use labels designed to be completed using handwritten text.
  - 2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
  - 3. Minimum Size: 2 by 4 inches unless otherwise indicated.
- E. Floor Signs:
  - 1. Materials: Use factory preprinted, self-adhesive vinyl, polyester, or rubber labels with protective overlamine; removable.
  - 2. Minimum Size: 17-inch diameter unless otherwise indicated.

## **PART 3 EXECUTION**

### **301 PREPARATION**

- A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

### **302 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
  - 1. Surface-Mounted Equipment: Enclosure front.
  - 2. Flush-Mounted Equipment: Enclosure front.
  - 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
  - 4. Elevated Equipment: Legible from the floor or working platform.
  - 5. Branch Devices: Adjacent to device.
  - 6. Interior Components: Legible from the point of access.
  - 7. Conduits: Legible from the floor.
  - 8. Boxes: Outside face of cover.
  - 9. Conductors and Cables: Legible from the point of access.
  - 10. Devices: Outside face of cover.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- F. Install underground warning tape above buried lines with one tape per trench at 3 inches below finished grade.
- G. Secure rigid signs using stainless steel screws.

### **303 FIELD QUALITY CONTROL**

- A. See Section 014000 - DO NOT USE BSD Quality Requirements, for additional requirements.
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- B. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

**END OF SECTION**



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**SECTION 263213  
ENGINE GENERATORS**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section includes packaged engine generators for emergency use with the following features:
  - 1. Natural gas engine.
  - 2. Gaseous fuel system.
  - 3. Control and monitoring.
  - 4. Generator overcurrent and fault protection.
  - 5. Generator, exciter, and voltage regulator.
  - 6. Load banks.
  - 7. Outdoor engine generator enclosure.
  - 8. Vibration isolation devices.
  - 9. Finishes.
- B. Related Requirements:
  - 1. Section 26 3600 "Transfer Switches – ALTERNATE 2" for transfer switches including sensors and relays to initiate automatic-starting and -stopping signals for engine generators.

**1.3 DEFINITIONS**

- A. EPS: Emergency power supply.
- B. EPSS: Emergency power supply system.
- C. LP: Liquid petroleum.
- D. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

**1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
  - 1. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
  - 2. Include thermal damage curve for generator.
  - 3. Include time-current characteristic curves for generator protective device.
  - 4. Include fuel consumption in cubic feet per hour at 0.8 power factor at 0.5, 0.75, and 1.0 times generator capacity.
  - 5. Include generator efficiency at 0.8 power factor at 0.5, 0.75, and 1.0 times generator capacity.
  - 6. Include airflow requirements for cooling and combustion air in cubic feet per minute at 0.8 power factor, with air-supply temperature of 95, 80, 70, and 50 deg F. Provide Drawings indicating requirements and limitations for location of air intake and exhausts.
  - 7. Include generator characteristics, including, but not limited to, kilowatt rating, efficiency, reactances, and short-circuit current capability.
- B. Shop Drawings:
  - 1. Include plans and elevations for engine generator and other components specified.
  - 2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 3. Identify fluid drain ports and clearance requirements for proper fluid drain.

4. Design calculations for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
5. Vibration Isolation Base Details: Detail fabrication, including anchorages and attachments to structure and supported equipment. Include base weights.
6. Include diagrams for power, signal, and control wiring. Complete schematic, wiring, and interconnection diagrams showing terminal markings for EPS equipment and functional relationship between all electrical components.

### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and testing agency.
- B. Seismic Qualification Data: Certificates, for engine generator, accessories, and components, from manufacturer.
  1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  2. Dimensioned Outline Drawings of Equipment Unit: With engine and generator mounted on rails, identify center of gravity and total weight, including supplied enclosure and each piece of equipment not integral to the engine generator, and locate and describe mounting and anchorage provisions.
  3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- C. Source Quality-Control Reports: Including, but not limited to, the following:
  1. Certified summary of prototype-unit test report.
  2. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.
  3. Certified Summary of Performance Tests: Certify compliance with specified requirement to meet performance criteria for sensitive loads.
  4. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.
  5. Report of sound generation.
  6. Report of exhaust emissions showing compliance with applicable regulations.
  7. Certified Torsional Vibration Compatibility: Comply with NFPA 110.
- D. Field quality-control reports.
- E. Warranty: For special warranty.

### 1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals.
  1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
    - a. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.
    - b. Operating instructions laminated and mounted adjacent to generator location.
    - c. Training plan.

### 1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  1. Fuses: One for every 10 of each type and rating, but no fewer than one of each.
  2. Indicator Lamps: Two for every six of each type used, but no fewer than two of each.
  3. Filters: One set each of lubricating oil, fuel, and combustion-air filters.
  4. Tools: Each tool listed by part number in operations and maintenance manual.

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## 1.8 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
- B. Testing Agency Qualifications: Accredited by NETA.
  - 1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

## 1.9 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: five years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Caterpillar, Inc.; Electric Power Division.
  - 2. Cummins Power Generation.
  - 3. Generac Industrial Power.
- B. Source Limitations: Obtain packaged engine generators and auxiliary components from single source from single manufacturer.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Engine generator housing, engine generator, batteries, battery racks, silencers, sound attenuating equipment, accessories, and components shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
  - 1. The term "withstand" means "the unit will remain in place without separation of any parts when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."
  - 2. Shake-table testing shall comply with ICC-ES AC156. Testing shall be performed with all fluids at worst-case normal levels.
  - 3. Component Importance Factor: 1.0.
- B. B11 Compliance: Comply with B11.19.
- C. NFPA Compliance:
  - 1. Comply with NFPA 37.
  - 2. Comply with NFPA 70.
  - 3. Comply with NFPA 99.
  - 4. Comply with NFPA 110 requirements for Level 1 EPSS.
- D. UL Compliance: Comply with UL 2200.
- E. Engine Exhaust Emissions: Comply with EPA requirements and applicable state and local government requirements.
- F. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at adjacent property boundaries due to sound emitted by engine generator, including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.
- G. Environmental Conditions: Engine generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:
  - 1. Ambient Temperature: 5 to 104 deg F.
  - 2. Relative Humidity: Zero to 95 percent.
  - 3. Altitude: Sea level to 1000 feet.

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## 2.3 ENGINE GENERATOR ASSEMBLY DESCRIPTION

- A. Factory-assembled and -tested, water-cooled engine, with brushless generator and accessories.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- C. Service Load: 625kW/781kVA.
- D. Power Factor: 0.8, lagging.
- E. Frequency: 60 Hz.
- F. Voltage: 480-V ac.
- G. Phase: Three-phase, four-wire wye.
- H. Governor: Adjustable isochronous, with speed sensing.
- I. Mounting Frame: Structural-steel framework to maintain alignment of mounted components without depending on concrete foundation. Provide lifting attachments sized and spaced to prevent deflection of base during lifting and moving.
  - 1. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and engine generator center of gravity.
- J. Capacities and Characteristics:
  - 1. Power Output Ratings: Nominal ratings as indicated at 0.8 power factor excluding power required for the continued and repeated operation of the unit and auxiliaries.
  - 2. Alternator: Capable of accepting a minimum of 2703 kVA motor starting load with a maximum instantaneous voltage dip of 30%.
  - 3. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.
- K. Engine Generator Performance:
  - 1. Steady-State Voltage Operational Bandwidth: 3 percent of rated output voltage, from no load to full load.
  - 2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within three seconds.
  - 3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency, from no load to full load.
  - 4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
  - 5. Transient Frequency Performance: Less than 5 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within five seconds.
  - 6. Output Waveform: At no load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for single harmonics. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.
  - 7. Sustained Short-Circuit Current: For a three-phase, bolted short circuit at system output terminals, system shall supply a minimum of 250 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to generator system components.
  - 8. Start Time: Comply with NFPA 110, Type 10, system requirements.

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## 2.4 ENGINE

- A. Fuel: Natural gas.
- B. Rated Engine Speed: 1800 rpm.
- C. Lubrication System: Engine or skid mounted.
  - 1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.
  - 2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
  - 3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.
- D. Jacket Coolant Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity and with UL 499.
- E. Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine generator mounting frame and integral engine-driven coolant pump.
  - 1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
  - 2. Size of Radiator: Adequate to contain expansion of total system coolant, from cold start to 110 percent load condition.
  - 3. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant-system pressure for engine used. Equip with gage glass and petcock.
  - 4. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
  - 5. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, UV-, and abrasion-resistant fabric.
    - a. Rating: 50-psig maximum working pressure with coolant at 180 deg F, and noncollapsible under vacuum.
    - b. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.
- F. Muffler/Silencer: Critical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.
  - 1. Minimum sound attenuation of 25 dB at 500 Hz.
  - 2. Sound level measured at a distance of 25 feet from exhaust discharge after installation is complete shall be 78 dBA or less.
- G. Air-Intake Filter: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.
- H. Starting System: 24-V electric, with negative ground.
  - 1. Components: Sized so they are not damaged during a full engine-cranking cycle, with ambient temperature at maximum specified in "Performance Requirements" Article.
  - 2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
  - 3. Cranking Cycle: As required by NFPA 110 for system level specified.
  - 4. Battery: Adequate capacity within ambient temperature range specified in "Performance Requirements" Article to provide specified cranking cycle at least three times without recharging.
  - 5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.

6. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 50 deg F regardless of external ambient temperature within range specified in "Performance Requirements" Article. Include accessories required to support and fasten batteries in place. Provide ventilation to exhaust battery gases.
7. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.

## 2.5 GASEOUS FUEL SYSTEM

- A. Natural Gas Piping: Comply with requirements in Section 231123 "Facility Natural Gas Piping."
- B. Gas Train: Comply with NFPA 37.
- C. Engine Fuel System:
  1. Natural Gas, Vapor-Withdrawal System:
    - a. Not to exceed design value of 6847 scfh fuel consumption at full load with a minimum operating pressure of 7"-11" H<sub>2</sub>O.
    - b. Carburetor.
    - c. Secondary Gas Regulators: One for each fuel type, with atmospheric vents piped to building exterior.
    - d. Fuel-Shutoff Solenoid Valves: NRTL-listed, normally closed, safety shutoff valves; one for each fuel source.
  2. Fuel Filters: One for each fuel type.
  3. Manual Fuel Shutoff Valves: One for each fuel type.
  4. Flexible Fuel Connectors: Minimum one for each fuel connection.
  5. LP gas flow adjusting valve.
  6. Fuel change gas pressure switch.

## 2.6 CONTROL AND MONITORING

- A. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of engine generator. When mode-selector switch is switched to the on position, engine generator starts. The off position of same switch initiates engine generator shutdown. When engine generator is running, specified system or equipment failures or derangements automatically shut down engine generator and initiate alarms.
- B. Manual Starting System Sequence of Operation: Switching On-Off switch on the generator control panel to the on position starts engine generator. The off position of same switch initiates engine generator shutdown. When engine generator is running, specified system or equipment failures or derangements automatically shut down engine generator and initiate alarms.
- C. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the engine generator. Mounting method shall isolate the control panel from engine generator vibration. Panel shall be powered from the engine generator battery.
- D. Control and Monitoring Panel:
  1. Digital controller with integrated LCD display, controls, and microprocessor, capable of local and remote control, monitoring, and programming, with battery backup.
  2. Instruments: Located on the control and monitoring panel and viewable during operation.
    - a. Engine lubricating-oil pressure gage.
    - b. Engine-coolant temperature gage.
    - c. DC voltmeter (alternator battery charging).
    - d. Running-time meter.
    - e. AC voltmeter.
    - f. AC ammeter.
    - g. AC frequency meter.
    - h. Generator-voltage adjusting rheostat.

- 
3. Controls and Protective Devices: Controls, shutdown devices, and common visual alarm indication as required by NFPA 110 for Level 1 system, including the following:
    - a. Cranking control equipment.
    - b. Run-Off-Auto switch.
    - c. Control switch not in automatic position alarm.
    - d. Overcrank alarm.
    - e. Overcrank shutdown device.
    - f. Low water temperature alarm.
    - g. High engine temperature pre-alarm.
    - h. High engine temperature.
    - i. High engine temperature shutdown device.
    - j. Overspeed alarm.
    - k. Overspeed shutdown device.
    - l. Coolant low-level alarm.
    - m. Coolant low-level shutdown device.
    - n. EPS load indicator.
    - o. Battery high-voltage alarm.
    - p. Low-cranking voltage alarm.
    - q. Battery-charger malfunction alarm.
    - r. Battery low-voltage alarm.
    - s. Lamp test.
    - t. Contacts for local and remote common alarm.
    - u. Remote manual-stop shutdown device.
    - v. Generator overcurrent-protective-device not-closed alarm.
  - E. Connection to Datalink:
    1. A separate terminal block, factory wired to Form C dry contacts, for each alarm and status indication.
  - F. Common Remote Panel with Common Audible Alarm: Comply with NFPA 110 requirements for Level 1 systems. Include necessary contacts and terminals in control and monitoring panel. Remote panel shall be powered from the engine generator battery.
  - G. Remote Alarm Annunciator: Comply with NFPA 99. An LED indicator light labeled with proper alarm conditions shall identify each alarm event, and a common audible signal shall sound for each alarm condition. Silencing switch in face of panel shall silence signal without altering visual indication. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset. Cabinet and faceplate are surface- or flush-mounting type to suit mounting conditions indicated.
    1. Overcrank alarm.
    2. Coolant low-temperature alarm.
    3. High engine temperature pre-alarm.
    4. High engine temperature alarm.
    5. Low lube oil pressure alarm.
    6. Overspeed alarm.
    7. Low-fuel main tank alarm.
    8. Low coolant level alarm.
    9. Low-cranking voltage alarm.
    10. Contacts for local and remote common alarm.
    11. Audible-alarm silencing switch.
    12. Run-Off-Auto switch.
    13. Control switch not in automatic position alarm.
    14. Low-cranking voltage alarm.
    15. Generator overcurrent-protective-device not-closed alarm.
  - H. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator unless otherwise indicated.

- I. Remote Emergency-Stop Switch: Surface; weatherproof enclosure, wall mounted unless otherwise indicated; and labeled. Push button shall be protected from accidental operation.

## **2.7 GENERATOR OVERCURRENT AND FAULT PROTECTION**

- A. Overcurrent protective devices for the entire EPSS shall be coordinated to optimize selective tripping when a short circuit occurs. Coordination of protective devices shall consider both utility and EPSS as the voltage source.
  - 1. Overcurrent protective devices for the EPSS shall be accessible only to authorized personnel.
- B. Generator Circuit Breaker: Molded-case, electronic-trip type; 100 percent rated; complying with UL 489.
  - 1. Tripping Characteristics: Adjustable long-time and short-time delay and instantaneous.
  - 2. Trip Settings: Selected to coordinate with generator thermal damage curve.
  - 3. Shunt Trip: Connected to trip breaker when engine generator is shut down by other protective devices.
  - 4. Mounting: Adjacent to or integrated with control and monitoring panel.
- C. Generator Protector: Microprocessor-based unit shall continuously monitor current level in each phase of generator output, integrate generator heating effect over time, and predict when thermal damage of alternator will occur. When signaled by generator protector or other engine generator protective devices, a shunt-trip device in the generator disconnect switch shall open the switch to disconnect the generator from load circuits. Protector performs the following functions:
  - 1. Initiates a generator overload alarm when generator has operated at an overload equivalent to 110 percent of full-rated load for 60 seconds. Indication for this alarm is integrated with other engine generator malfunction alarms. Contacts shall be available for load shed functions.
  - 2. Under single- or three-phase fault conditions, regulates generator to 300 percent of rated full-load current for up to 10 seconds.
  - 3. As overcurrent heating effect on the generator approaches the thermal damage point of the unit, protector switches the excitation system off, opens the generator disconnect device, and shuts down the engine generator.
  - 4. Senses clearing of a fault by other overcurrent devices and controls recovery of rated voltage to avoid overshoot.

## **2.8 GENERATOR, EXCITER, AND VOLTAGE REGULATOR**

- A. Comply with NEMA MG 1.
- B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.
- C. Electrical Insulation: Class H or Class F.
- D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required.
- E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.
- F. Enclosure: Dripproof.
- G. Instrument Transformers: Mounted within generator enclosure.
- H. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified and as required by NFPA 110.
  - 1. Adjusting Rheostat on Control and Monitoring Panel: Provide plus or minus 5 percent adjustment of output-voltage operating band.
- I. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above dew point.



- J. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.
- K. Subtransient Reactance: 12 percent, maximum.

**2.9 TEMPORARY LOAD BANK**

- A. Provide temporary load bank to test installation of the generator as required in "PART 3 – EXECUTION".
- B. Description: Load bank shall be resistive and reactive unit capable of providing a balanced 3-phase, delta-connected load to generator set at 100 percent rated-system capacity, at 80 percent power factor, lagging. Unit may be composed of separate resistive and reactive load banks controlled by a common control panel. Unit shall be capable of selective control of load in 25 percent steps and with minimum step changes of approximately 5 and 10 percent available.

**2.10 OUTDOOR ENGINE GENERATOR ENCLOSURE**

- A. Description: Vandal-resistant, sound-attenuating, weatherproof aluminum housing, wind resistant up to 100 mph. Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Panels shall be removable by one person without tools. Instruments and control shall be mounted within enclosure.
- B. Structural Design and Anchorage: Comply with ASCE/SEI 7 for wind loads up to 100 mph.
- C. Seismic Design: Comply with seismic requirements in Section 260548.16 "Seismic Controls for Electrical Systems."
- D. Muffler Location: Within enclosure.
- E. Engine-Cooling Airflow through Enclosure: Maintain temperature rise of system components within required limits when unit operates at 110 percent of rated load for two hours with ambient temperature at top of range specified in system service conditions.
- F. Convenience Outlets: Factory-wired, GFCI. Arrange for external electrical connection.

**2.11 VIBRATION ISOLATION DEVICES**

- A. Restrained Spring Isolators: Freestanding, steel, open-spring isolators with seismic restraint.
  - 1. Housing: Steel with resilient vertical-limit stops to prevent spring extension due to wind loads or if weight is removed; factory-drilled baseplate bonded to 1/4-inch-thick, elastomeric isolator pad attached to baseplate underside; and adjustable equipment-mounting and -leveling bolt that acts as blocking during installation.
  - 2. Outside Spring Diameter: Not less than 80 percent of compressed height of the spring at rated load.
  - 3. Minimum Additional Travel: 50 percent of required deflection at rated load.
  - 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
  - 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
- B. Comply with requirements in Section 232116 "Hydronic Piping Specialties" for vibration isolation and flexible connector materials for steel piping.
- C. Comply with requirements in Section 233113 "Metal Ducts" for vibration isolation and flexible connector materials for exhaust shroud and ductwork.
- D. Vibration isolation devices shall not be used to accommodate misalignments or to make bends.

**2.12 FINISHES**

- A. Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.

**2.13 SOURCE QUALITY CONTROL**

- A. Prototype Testing: Factory test engine generator using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.
  - 1. Tests: Comply with NFPA 110, Level 1 Energy Converters and with IEEE 115.

- B. Project-Specific Equipment Tests: Before shipment, factory test engine generator and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:
  - 1. Test components and accessories furnished with installed unit that are not identical to those on tested prototype to demonstrate compatibility and reliability.
  - 2. Test generator, exciter, and voltage regulator as a unit.
  - 3. Full-load run.
  - 4. Maximum power.
  - 5. Voltage regulation.
  - 6. Transient and steady-state governing.
  - 7. Single-step load pickup.
  - 8. Safety shutdown.
  - 9. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative.
  - 10. Report factory test results within 10 days of completion of test.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine generator performance.
- B. Examine roughing-in for piping systems and electrical connections to verify actual locations of connections before packaged engine generator installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### **3.2 PREPARATION**

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service according to requirements indicated:
  - 1. Notify Owner no fewer than seven working days in advance of proposed interruption of electrical service.
  - 2. Do not proceed with interruption of electrical service without Owner's written permission.

#### **3.3 INSTALLATION**

- A. Comply with packaged engine generator manufacturers' written installation and alignment instructions and with NFPA 110.
- B. Install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.
- C. Exhaust System: Install Schedule 40 black steel piping with welded joints and connect to engine muffler. Install thimble at wall. Piping shall be same diameter as muffler outlet.
  - 1. Install flexible connectors and steel piping materials according to requirements in Section 232116 "Hydronic Piping Specialties."
  - 2. Insulate muffler/silencer and exhaust system components according to requirements in Section 230719 "HVAC Piping Insulation."
- D. Drain Piping: Install condensate drain piping to muffler drain outlet with a shutoff valve, stainless-steel flexible connector, and Schedule 40 black steel pipe with welded joints.
- E. Gaseous Fuel Piping:
  - 1. Natural gas piping, valves, and specialties for gas distribution are specified in Section 231123 "Facility Natural Gas Piping."
- F. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not specified to be factory mounted.

### 3.4 CONNECTIONS

- A. Piping installation requirements are specified in other Sections. Drawings indicate general arrangement of piping and specialties.
- B. Connect fuel, cooling-system, and exhaust-system piping adjacent to packaged engine generator to allow service and maintenance.
- C. Connect engine exhaust pipe to engine with flexible connector.
- D. Gaseous Fuel Connections:
  - 1. Connect fuel piping to engines with a gate valve and union and flexible connector.
  - 2. Install manual shutoff valve in a remote location to isolate gaseous fuel supply to the generator.
  - 3. Vent gas pressure regulators outside building a minimum of 60 inches from building openings.
- E. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
- F. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables." Provide a minimum of one 90-degree bend in flexible conduit routed to the engine generator from a stationary element.

### 3.5 IDENTIFICATION

- A. Identify system components according to Section 230553 "Identification for HVAC Piping and Equipment" and Section 260553 "Identification for Electrical Systems."
- B. Install a sign indicating the generator neutral is bonded to the main service neutral at the main service location.

### 3.6 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- B. Perform tests and inspections with the assistance of a factory-authorized service representative.
- C. Tests and Inspections:
  - 1. Perform tests recommended by manufacturer and each visual and mechanical inspection and electrical and mechanical test listed in first two subparagraphs below, as specified in NETA ATS. Certify compliance with test parameters.
    - a. Visual and Mechanical Inspection:
      - 1) Compare equipment nameplate data with Drawings and the Specifications.
      - 2) Inspect physical and mechanical condition.
      - 3) Inspect anchorage, alignment, and grounding.
      - 4) Verify that the unit is clean.
    - b. Electrical and Mechanical Tests:
      - 1) Perform insulation-resistance tests according to IEEE 43.
        - a) Machines Larger Than 200 hp Test duration shall be 10 minutes. Calculate polarization index.
        - b) Machines 200 hp or Less: Test duration shall be one minute. Calculate the dielectric-absorption ratio.
      - 2) Test protective relay devices.
      - 3) Verify phase rotation, phasing, and synchronized operation as required by the application.
      - 4) Functionally test engine shutdown for low oil pressure, overtemperature, overspeed, and other protection features as applicable.
      - 5) Conduct performance test according to NFPA 110.
      - 6) Verify correct functioning of the governor and regulator.

2. Perform a stepped load-bank test. Each step to last fifteen (15) minutes. As a minimum, the following shall be observed and recorded at 25%, 50%, 80% and 100% stepped load during testing of generators on-site:
    - a. Volts and amps on each phase.
    - b. Frequency.
    - c. kW.
    - d. Oil pressure – shall not exceed the manufacturer’s recommended oil pressure at full load and operating temperature.
    - e. Engine Coolant temperature.
    - f. Hour meter readings.
  3. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here including, but not limited to, single-step full-load pickup test.
  4. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.
    - a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
    - b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
    - c. Verify acceptance of charge for each element of the battery after discharge.
    - d. Verify that measurements are within manufacturer's specifications.
  5. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
  6. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine generator system before and during system operation. Check for air, exhaust, and fluid leaks.
  7. Exhaust-System Back-Pressure Test: Use a manometer with a scale exceeding 40-inch wg. Connect to exhaust line close to engine exhaust manifold. Verify that back pressure at full-rated load is within manufacturer's written allowable limits for the engine.
  8. Exhaust Emissions Test: Comply with applicable government test criteria.
  9. Voltage and Frequency Transient Stability Tests: Use recording oscilloscope to measure voltage and frequency transients for 50 and 100 percent step-load increases and decreases, and verify that performance is as specified.
  10. Harmonic-Content Tests: Measure harmonic content of output voltage at 25 and 100 percent of rated linear load. Verify that harmonic content is within specified limits.
  11. Noise Level Tests: Measure A-weighted level of noise emanating from engine generator installation, including engine exhaust and cooling-air intake and discharge, at four locations 25 feet from edge of the generator enclosure on the property line, and compare measured levels with required values.
- D. Coordinate tests with tests for transfer switches and run them concurrently.
  - E. Test instruments shall have been calibrated within the past 12 months, traceable to NIST Calibration Services, and adequate for making positive observation of test results. Make calibration records available for examination on request.
  - F. Leak Test: After installation, charge exhaust, coolant, and fuel systems and test for leaks. Repair leaks and retest until no leaks exist.
  - G. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation for generator and associated equipment.
  - H. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
  - I. Remove and replace malfunctioning units and retest as specified above.
  - J. Retest: Correct deficiencies identified by tests and observations, and retest until specified requirements are met.

- K. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.
- L. Infrared Scanning: After Substantial Completion, but not more than 60 days after final acceptance, perform an infrared scan of each power wiring termination and each bus connection while running with maximum load. Remove all access panels, so terminations and connections are accessible to portable scanner.
  - 1. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan 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 terminations and connections checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

**3.7 MAINTENANCE SERVICE**

- A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by skilled employees of manufacturer's authorized service representative. Include quarterly preventive maintenance and exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Parts shall be manufacturer's authorized replacement parts and supplies.

**3.8 DEMONSTRATION**

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators.

**END OF SECTION 263213**

**SECTION 263600  
TRANSFER SWITCHES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Transfer switches for low-voltage (600 V and less) applications and associated accessories:
  - 1. Automatic transfer switches.
  - 2. Includes service entrance rated transfer switches.
  - 3. Remote annunciators.

**1.02 RELATED REQUIREMENTS**

- A. Section 033000 - Cast-in-Place Concrete: Concrete equipment pads.
- B. Section 260526 - Grounding and Bonding for Electrical Systems.
- C. Section 260529 - Hangers and Supports for Electrical Systems.
- D. Section 260553 - Identification for Electrical Systems: Identification products and requirements.
- E. Section 263213 - Engine Generators: For interface with transfer switches.
  - 1. Includes additional testing requirements.
  - 2. Includes related demonstration and training requirements.

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.
- C. NEMA ICS 10 Part 1 - Industrial Control and Systems Part 1: Electromechanical AC Transfer Switch Equipment 2020.
- D. NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems 2021.
- E. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. NFPA 110 - Standard for Emergency and Standby Power Systems 2022.
- G. UL 869A - Reference Standard for Service Equipment Current Edition, Including All Revisions.
- H. UL 1008 - Transfer Switch Equipment Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
    - 1. Coordinate compatibility of transfer switches to be installed with work provided under other sections or by others.
      - a. Engine Generators: See Section 263213.
    - 2. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances required by NFPA 70.
    - 3. Coordinate arrangement of equipment with the dimensions and clearance requirements of the actual equipment to be installed.
    - 4. Coordinate the work with placement of supports, anchors, etc. required for mounting.
    - 5. Notify Architect/Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
  - B. Preinstallation Meeting: Convene one week before starting work of this section; require attendance of all affected installers.
  - C. Where work of this section involves interruption of existing electrical service, arrange service interruption with Owner.
-

## **1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product, including ratings, configurations, dimensions, finishes, weights, service condition requirements, and installed features.
- C. Shop Drawings: Include dimensioned plan views and sections indicating locations of system components, required clearances, and field connection locations. Include system interconnection schematic diagrams showing all factory and field connections.
- D. Specimen Warranty: Submit sample of manufacturer's warranty.
- E. Evidence of qualifications for installer.
- F. Evidence of qualifications for maintenance contractor (if different entity from installer).
- G. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and operation of product.
- H. Manufacturer's certification that products meet or exceed specified requirements.
- I. Source quality control test reports.
- J. Manufacturer's detailed field testing procedures.
- K. Field quality control test reports.
- L. Operation and Maintenance Data: Include detailed information on system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
  - 1. Include contact information for entity that will be providing contract maintenance and trouble call-back service.
- M. Executed Warranty: Submit documentation of final executed warranty completed in Owner's name and registered with manufacturer.
- N. Maintenance contracts.
- O. Project Record Documents: Record actual locations of system components, installed circuiting arrangements and routing, and final equipment settings.
- P. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 016000 - Product Requirements, for additional provisions.

## **1.06 QUALITY ASSURANCE**

- A. Comply with the following:
    - 1. NFPA 70 (National Electrical Code).
    - 2. NFPA 110 (Standard for Emergency and Standby Power Systems); meet requirements for Level 2 system.
  - B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
  - C. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience with power transfer systems of similar size, type, and complexity; manufacturer's authorized installer.
  - D. Maintenance Contractor Qualifications: Same entity as installer or different entity with specified qualifications.
  - E. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.
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### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store transfer switches in accordance with manufacturer's instructions.
- B. 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.
- C. Handle carefully in accordance with manufacturer's instructions to avoid damage to transfer switch components, enclosure, and finish.

### **1.08 FIELD CONDITIONS**

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

### **1.09 WARRANTY**

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Provide minimum one year manufacturer warranty covering repair or replacement due to defective materials or workmanship.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Transfer Switches - Basis of Design: ASCO Power Technologies.
- B. Transfer Switches - Other Acceptable Manufacturers:
  - 1. ABB/GE; [\_\_\_\_\_]: [www.electrification.us.abb.com/#sle](http://www.electrification.us.abb.com/#sle).
  - 2. ASCO Power Technologies; [\_\_\_\_\_]: [www.ascopower.com/#sle](http://www.ascopower.com/#sle).
  - 3. Eaton Corporation: [www.eaton.com/#sle](http://www.eaton.com/#sle).
  - 4. Same as manufacturer of engine generator(s) used for this project.
    - a. Generac Power Systems: [www.generac.com/industrial/#sle](http://www.generac.com/industrial/#sle).
- C. Substitutions: See Section 016000 - Product Requirements.
- D. Products other than basis of design are subject to compliance with specified requirements and prior approval of Engineer. By using products other than basis of design, Contractor accepts responsibility for costs associated with any necessary modifications to related work, including any design fees.
- E. Source Limitations: Furnish transfer switches and accessories produced by a single manufacturer and obtained from a single supplier.

### **2.02 TRANSFER SWITCHES**

- A. Provide complete power transfer system consisting of all required equipment, conduit, boxes, wiring, supports, accessories, system programming, etc. as necessary for a complete operating system that provides the functional intent indicated.
  - B. Provide products listed, classified, and labeled as suitable for the purpose intended.
  - C. Applications:
    - 1. Utilize open transition transfer unless otherwise indicated or required.
  - D. Construction Type: Either "contactor type" (open contact) or "breaker type" (enclosed contact) transfer switches complying with specified requirements are acceptable.
  - E. Automatic Transfer Switch:
    - 1. Basis of Design: ASCO Power Technologies.
    - 2. Transfer Switch Type: As indicated on the drawings.
    - 3. Transition Configuration: As indicated on the drawings.
    - 4. Voltage: As indicated on the drawings.
    - 5. Ampere Rating: As indicated on the drawings.
    - 6. Neutral Configuration: Solid neutral (unswitched), except as indicated.
    - 7. Load Served: As indicated on the drawings.
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8. Primary Source: As indicated on the drawings.
9. Alternate Source: As indicated on the drawings.
- F. Comply with NEMA ICS 10 Part 1, and list and label as complying with UL 1008 for the classification of the intended application (e.g. emergency, optional standby).
- G. Do not use double throw safety switches or other equipment not specifically designed for power transfer applications and listed as transfer switch equipment.
- H. Load Classification: Classified for total system load (any combination of motor, electric discharge lamp, resistive, and tungsten lamp loads with tungsten lamp loads not exceeding 30 percent of the continuous current rating) unless otherwise indicated or required.
- I. Switching Methods:
  1. Open Transition:
    - a. Provide break-before-make transfer without a neutral position that is not connected to either source, and with interlocks to prevent simultaneous connection of the load to both sources.
  2. Obtain control power for transfer operation from line side of source to which the load is to be transferred.
- J. Service Conditions: Provide transfer switches suitable for continuous operation at indicated ratings under the service conditions at the installed location.
- K. Enclosures:
  1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
    - a. Outdoor Locations: Type 3R or Type 4.
  2. Provide lockable door(s) for outdoor locations.
  3. Finish: Manufacturer's standard unless otherwise indicated.
- L. Short Circuit Current Rating:
  1. Withstand and Closing Rating: Provide transfer switches, when protected by the supply side overcurrent protective devices to be installed, with listed withstand and closing rating not less than the available fault current at the installed location as indicated on the drawings.
- M. Automatic Transfer Switches:
  1. Description: Transfer switches with automatically initiated transfer between sources; electrically operated and mechanically held.
  2. Control Functions:
    - a. Automatic mode.
    - b. Test Mode: Simulates failure of primary/normal source.
    - c. Voltage and Frequency Sensing:
      - 1) Undervoltage sensing for each phase of primary/normal source; adjustable dropout/pickup settings.
      - 2) Undervoltage sensing for alternate/emergency source; adjustable dropout/pickup settings.
      - 3) Underfrequency sensing for alternate/emergency source; adjustable dropout/pickup settings.
    - d. Outputs:
      - 1) Contacts for engine start/shutdown (except where direct generator communication interface is provided).
      - 2) Auxiliary contacts; one set(s) for each switch position.
    - e. Adjustable Time Delays:
      - 1) Engine generator start time delay; delays engine start signal to override momentary primary/normal source failures.
      - 2) Transfer to alternate/emergency source time delay.
      - 3) Retransfer to primary/normal source time delay.

- 4) Engine generator cooldown time delay; delays engine shutdown following retransfer to primary/normal source to permit generator to run unloaded for cooldown period.
- f. In-Phase Monitor (Open Transition Transfer Switches): Monitors phase angle difference between sources for initiating in-phase transfer.
- g. Engine Exerciser: Provides programmable scheduled exercising of engine generator selectable with or without transfer to load; provides memory retention during power outage.
3. Status Indications:
  - a. Connected to alternate/emergency source.
  - b. Connected to primary/normal source.
  - c. Alternate/emergency source available.
4. Other Features:
  - a. Event log.
5. Automatic Sequence of Operations:
  - a. Upon failure of primary/normal source for a programmable time period (engine generator start time delay), initiate starting of engine generator where applicable.
  - b. When alternate/emergency source is available, transfer load to alternate/emergency source after programmable time delay.
  - c. When primary/normal source has been restored, retransfer to primary/normal source after a programmable time delay. Bypass time delay if alternate/emergency source fails and primary/normal source is available.
  - d. Where applicable, initiate shutdown of engine generator after programmable engine cooldown time delay.
- N. Service Entrance Rated Transfer Switches:
  1. Furnished with integral disconnecting and overcurrent protective device on the primary/normal source and with ground-fault protection where indicated.
  2. Listed and labeled as suitable for use as service equipment according to UL 869A.
- O. Remote Annunciators:
  1. Remote Annunciator Mounting: Wall-mounted; Provide flush-mounted annunciator for finished areas and surface-mounted annunciator for non-finished areas unless otherwise indicated.
  2. Transfer Switch Status Indications:
    - a. Connected to alternate/emergency source.
    - b. Connected to primary/normal source.
    - c. Alternate/emergency source available.
    - d. Primary/normal source available.
- P. Interface with Other Work:
  1. Interface with engine generators as specified in Section 263213.

## **203 SOURCE QUALITY CONTROL**

- A. See Section 014000 - DO NOT USE BSD Quality Requirements, for additional requirements.
- B. Perform production tests on transfer switches at factory to verify operation and performance characteristics prior to shipment. Include certified test report with submittals.

## **PART 3 EXECUTION**

### **301 EXAMINATION**

- A. Verify that field measurements are as indicated.
  - B. Verify that the ratings and configurations of transfer switches are consistent with the indicated requirements.
  - C. Verify that rough-ins for field connections are in the proper locations.
  - D. Verify that mounting surfaces are ready to receive transfer switches.
-

- E. Verify that conditions are satisfactory for installation prior to starting work.

**302 INSTALLATION**

- A. Perform work in accordance with NECA 1 (general workmanship).
- B. Install products in accordance with manufacturer's instructions.
- C. Arrange equipment to provide minimum clearances and required maintenance access.
- D. Provide required support and attachment in accordance with Section 260529.
- E. Install transfer switches plumb and level.
- F. Unless otherwise indicated, mount floor-mounted transfer switches on properly sized 3 inch high concrete pad constructed in accordance with Section 033000.
- G. Provide grounding and bonding in accordance with Section 260526.
- H. Identify transfer switches and associated system wiring in accordance with Section 260553.

**303 FIELD QUALITY CONTROL**

- A. See Section 014000 - DO NOT USE BSD Quality Requirements, for additional requirements.
- B. Provide services of a manufacturer's authorized representative to observe installation and assist in inspection and testing. Include manufacturer's detailed testing procedures and field reports with submittals.
- C. Prepare and start system in accordance with manufacturer's instructions.
- D. Automatic Transfer Switches:
  - 1. Inspect and test in accordance with NETA ATS, except Section 4.
  - 2. Perform inspections and tests listed in NETA ATS, Section 7.22.3. The insulation-resistance tests listed as optional are not required.
- E. Provide additional inspection and testing as required for completion of associated engine generator testing as specified in Section 263213.
- F. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.
- G. Submit detailed reports indicating inspection and testing results and corrective actions taken.

**304 CLEANING**

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

**305 CLOSEOUT ACTIVITIES**

- A. See Section 017800 - Closeout Submittals, for closeout submittals.
- B. See Section 017900 - Demonstration and Training, for additional requirements.
- C. Demonstration: Demonstrate proper operation of transfer switches to Owner, and correct deficiencies or make adjustments as directed.
- D. Training: Train Owner's personnel on operation, adjustment, and maintenance of transfer switches.
  - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
  - 2. Provide minimum of four hours of training.
  - 3. Instructor: Manufacturer's authorized representative.
  - 4. Location: At project site.
- E. Coordinate with related generator demonstration and training as specified in Section 263213.

**306 PROTECTION**

- A. Protect installed transfer switches from subsequent construction operations.
-

**307 MAINTENANCE**

- A. See Section 017000 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.
- B. Provide trouble call-back service upon notification by Owner:
  - 1. Provide on-site response within 4 hours of notification.
  - 2. Include allowance for call-back service during normal working hours at no extra cost to Owner.
  - 3. Owner will pay for call-back service outside of normal working hours on an hourly basis, based on actual time spent at site and not including travel time; include hourly rate and definition of normal working hours in maintenance contract.
- C. Maintain an on-site log listing the date and time of each inspection and call-back visit, the condition of the system, nature of the trouble, correction performed, and parts replaced.

**END OF SECTION**

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## SECTION 312000 – SITE GRADING

## PART 1 - GENERAL

**1.1 WORK DEFINED**

- A. Work covered by this section includes site grading, stone filling and the construction of embankments.

**1.2 RELATED WORK**

- A. Section 02000 - Excavation, Grading, and Shoring
- B. Section 02110 - Clearing and Grubbing
- C. Section 02221 - Pipe and Structure Backfill
- D. Section 02250 - Soil Compaction
- E. Section 02936 - Seeding

**1.3 QUALITY ASSURANCE**

- A. All finished grades shall be as shown on the Drawings or as specified by the Engineer.
- B. When placing fill or construction embankments, all compaction and soil moisture requirements as delineated in Section 02250 shall be followed.

**1.4 SUBMITTALS**

- A. Certified copies of all results of maximum density tests and field compaction density tests as required in Section 02250.
- B. Gradations of all materials to be used.

**1.5 DELIVERY, STORAGE AND HANDLING**

- A. Delivery of borrow materials to the site or stockpiling of spoil on the site shall be done in a manner which will not cause any nuisance or allow spillage of materials from the transporting vehicle on public highways.
- B. Store topsoil separately from all other excavated materials and preserve for reuse.
- C. Materials which are required to be stored shall be stored in an orderly manner and at a sufficient distance away from banks of excavations and trenches to avoid overloading and prevent slides or cave-ins. Do not store materials on, over, or adjacent to structures or utilities which may collapse due to the added weight.
- D. Promptly remove materials not specified to be stored or reused. Burning of materials at the site is not permitted. Such materials shall be disposed of off-site in conformance with applicable legal requirements and in a manner acceptable to the Engineer.
- E. Obstruction of roads, driveways, sidewalks, or interference with drainage along gutters, ditches, or drainage channels with stored material is not permitted. If materials cannot be stored at the site to avoid such obstructions and interferences, they shall be stored away from the site and brought back when and as needed.

**1.6 JOB CONDITIONS**

- A. Keep ground surfaces well drained, but avoid erosion. Do not place fill on wet grade, in water, or over ice or snow.
- B. Filling with frozen materials or when materials already in place are frozen is not permitted.

**1.7 SCHEDULING AND SEQUENCING**

- A. Schedule the work with the Engineer and afford him adequate time and space to make all required inspections.
- B. Schedule work to coordinate with the approved testing laboratory so that required tests can be taken.

**PART 2 - PRODUCTS****2.1 EARTH FILL MATERIAL**

- A. Unless otherwise specified, shown on the Contract Drawings, or directed by the Engineer, all fill material shall be common earth or select granular materials as defined in Section 02000.
- B. To the extent it is available, fill material shall consist of approved on-site materials. When there is insufficient approved materials on-site, import approved additional material from off-site, at no additional cost to the owner.

**PART 3 - EXECUTION****3.1 INSPECTION**

- A. Verify that all boundaries of temporary and permanent easements and property lines are clearly marked in the field and that the work will not violate these boundaries.
- B. Ascertain and verify the locations and character of structures, underground lines, and subsurface conditions and verify that the work will not adversely affect them.
- C. Verify that grade stakes have been properly and accurately set.
- D. Do not begin operations until conditions are satisfactory.

**3.2 STRIP AND STOCKPILE TOPSOIL**

- A. Strip topsoil to its full depth within all areas to be excavated or graded and in areas to receive payments, fills, or embankments.
- B. Store topsoil on-site, in storage piles. Keep topsoil separated from all other excavated materials and store free of roots and other undesirable materials.

**3.3 DISPOSAL OF MATERIALS**

- A. Use approved on-site materials to the extent they are available. All excess material shall remain stockpiled on-site for fill.

**3.4 SITE GRADING**

- A. Rough grade the portions of the site which must be raised or lowered in order to properly execute the work under other sections.
- B. Uniformly grade the site to the lines, grades, and elevations shown on the Drawings. Finished surfaces shall be reasonably smooth, compacted, and free from irregular surface changes. Unless otherwise specified, the finish grade shall be equivalent to that ordinarily obtainable from either blade grader or scraper operations.
- C. In unpaved areas, except those to be rip-rapped, lined, or specially treated, smooth the surface sufficiently for application of topsoil. The finished topsoil subgrade shall not be more than one inch above or below the established grade or cross section.
- D. In unpaved areas, the finished grades shown on the Drawings include a layer of topsoil. The thickness of the topsoil is as specified in Section 02936.

**3.5 EMBANKMENT CONSTRUCTION**

- A. Level off surfaces upon which embankments are to be constructed. Where existing ground is left undisturbed, plow or disk the surface and mix it in with the first layer of embankment material to provide a satisfactory bone.
- B. Ground surfaces sloped steeper than 1 vertical to 4 horizontal shall be plowed, stepped, or broken up to permit bonding of the embankment with the existing surface.
- C. Uniformly place and spread fill in successive horizontal layers not more than 8 inches in compacted depth.
- D. For compaction requirements refer to Section 02250.

**3.6 SUBGRADE AND EMBANKMENT PROTECTION**

- A. Keep the embankments and excavations shaped and well drained. Where ruts or erosion occur, add additional fill and re-shape and re-compact before placing any subsequent materials.
- B. The storage or stockpiling of material on prepared subgrades is not permitted.
- C. All subgrades will be inspected by the Engineer prior to final surface restoration or finishing.

**3.7 DITCHES - SWALES**

- A. Accurately cut ditches and swales to the required cross sections and grades. Cut off all roots, stumps, rock, and foreign matter, in the sides and bottoms of ditches and swales, to conform to the required slope, grade, and shape.
- B. Maintain ditches and swales at all times so that they effectively drain. Refill, re-shape, and recompact where ruts or erosion occurs.

**3.8 DUMPED STONE FILL (if required)**

- A. Place stone fill in a manner so as to produce a reasonably well graded mass of rock with the minimum practicable percentage of voids. The finished stone surface shall be free from objectionable pockets of smaller stones and clusters of larger stones.
- B. Placing stones in layers or dumping by methods likely to cause segregation of the various sizes is not permitted. Obtain the desired distribution of the various sized stones by selectively loading, controlled dumping of successive loads or by other approved means.



- C. Completely fill voids with fine stone or gravel. Rearrange stones by mechanical equipment or by hand to the extent necessary to obtain a reasonably well grade distribution.
- D. The final stone surface shall not exceed 3 inches± from the required grades and elevations. Leave stone fill in a firm stable mass.

### **3.9 PREPARATION OF PAVEMENT SUBGRADES**

- A. Shape the entire subgrade to the required line, grade, and cross section. Remove and dispose of all soft and unsuitable material and replace with an approved material. Remove and dispose of all boulders and ledge rock. Break off to a depth of not less than 6 inches below the subgrade. Fill resulting depressions with an approved material.
- B. Roll subgrade with a roller weighing not less than 10 tons and achieve the required compaction densities specified in Section 02250. Re-shape, wet, and aerate subgrade as required. Compact the entire width of the area to receive pavement, plus the areas within five feet of and parallel and adjacent to the edges of the pavement. Compact the full depth of embankments to the required density. Where cuts are encountered, thoroughly roll and compact until no further consolidation is apparent.
- C. When pavements cannot be placed immediately after the preparation of the subgrade, the entire subgrade shall be re-shaped and compacted to the required line, grade, and cross section.
- D. After rolling, the surface of the subgrade shall not show any deviation in excess of 3/8 inch when tested with a 10-foot straightedge applied both parallel and at right angles to the centerline of the area. The elevation of the finished subgrade shall not vary more than 0.05' from the established grade and cross section.
- E. Do not disturb the finished subgrade by traffic or other operations and protect and maintain in a satisfactory condition until the overlying pavement is placed.

END OF SECTION

## SECTION 312100 – PIPE AND STRUCTURE BACKFILL

## PART 1 - GENERAL

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.

**1.2 DESCRIPTION OF WORK**

- A. Extent of pipe and structure backfill work includes, but is not limited to the following:
  - 1. Furnish and place backfill for pipe or utility trenches, and facility foundations, to the lines and grades shown on the Contract Drawings.
  - 2. Furnish and place general backfill, engineered backfill and porous backfill under slabs on grade.

**1.3 RELATED WORK**

- A. Section 02000 - Excavation, Grading, and Shoring
- B. Section 02250 - Soil Compaction
- C. Section 02270 - Erosion Control
- D. Section 02936 - Seeding

**1.4 SUBMITTALS**

- A. Test results for gradation, moisture content (Proctor Tests) or other requirements on the various soil and granular items, from each approved material source, prior to their use on the project.
- B. Copies of measurements and computed volumes of unsuitable material removed shall be submitted to the Engineer.
- C. Details of proposed sheeting, if required, shall be submitted to the Engineer for review and no sheeting shall be installed until written acceptance from the Engineer.

**1.5 QUALITY ASSURANCE**

- A. If trench widths and depths are exceeded, concrete cradles or other special installation procedures may be required and shall be provided where directed by Engineer. All additional costs, including the cost of redesigns, shall be borne by Contractor.
- B. Moisten or dry backfill to the proper moisture content as determined in accordance with ASTM D1557, Method C in order to obtain proper compaction.
- C. All subgrades shall be approved by Engineer before pipes, structures, and facilities are installed or concrete is placed.
- D. The existing ground elevations as shown on the Drawings are believed to be reasonably correct. The Contractor shall satisfy himself, however, by actual examination of the sites of the work, as to the existing elevations and the amount of work required under this section. No claim shall be made by the Contractor for additional compensation by reason of the fact that conditions are other than as shown.

**1.6 JOB CONDITIONS**

- A. Provide and maintain suitable temporary crossings over open trenches where necessary to maintain access for other Contractors, the Engineer or general public (if applicable).
- B. Any backfill material over trenches that settle and/or erode during a period of one (1) year after the date of final acceptance shall be repaired by the Contractor upon receipt of written notice from the Engineer, at no expense to the Owner.
- C. The Contractor shall take precautions to protect from harm the work of other contractors on site, existing facilities, as well as adjacent property. The Contractor shall be responsible for all damage or injury done to pipes, structures, pavement, property or persons due to improper placing or compacting of backfill. The Contractor shall repair such damaged property or item to the satisfaction of the property owner, public agency having jurisdiction and/or Engineer at no additional cost the Owner.
- D. When it is necessary to haul material over the streets or pavements, the Contractor shall provide suitable tight vehicles so as to prevent deposits on the streets or pavements. In all cases where any materials are dropped from the vehicles, the Contractor shall clean up the same as often as directed and keep the crosswalks, streets, and pavements clean and free from dirt, mud, stone, and other hauled material.
- E. Flagmen, guards, barricades, lights, services, and other items needed for the protection of persons and property shall be furnished and maintained by the Contractor. Costs for these items shall be included in the prices bid for the Contract.
- F. The Contractor shall remove any waste material or other debris that has accumulated as a result of the work of this section and dispose in conformance with applicable legal requirements and in a manner acceptable to the Engineer.

**PART 2 - PRODUCTS****2.1 GENERAL REQUIREMENTS**

- A. The various types of backfill material to be utilized on-site are specified below and shall be used as described unless specifically shown otherwise on the drawings. For backfill at building structures, three (3) types of fill are required as defined here and described below:
  - 1. Condition 1 - Ordinary general earth fill or select earth fill. (see Section 02000).
  - 2. Condition 2 - Select run-of-bank gravel. (see Type E granular material)
  - 3. Condition 3 - Porous run-of-bank gravel. (see Type B granular material)
- B. Mechanical, vibratory, pneumatic tampers or other method as approved by the Engineer shall be required.
- C. Water in sufficient quantity may be required to assure compaction.
- D. Lift thickness, and the compactive capabilities of the equipment used, shall be continually monitored by the Contractor to obtain the compaction efforts required per Section 02250 for all materials used for backfill.
- E. Earth materials (including common earth, general earth and select earth fill) specified for backfill, shall be in accordance with Section 02000 or appropriate N.Y.S.D.O.T. items as indicated on the Contract Drawings.

**2.2 GRANULAR ITEMS**

- A. Type A – Material shall meet the requirements of NYSDOT #2 Coarse Aggregate Section 703-02 as defined in the NYSDOT “Standard Specifications” issued in May 2008 (and any subsequent revisions). The material shall meet the following gradation by weight:

1 ½ inch	100
1 inch	90-100
½ inch	0-15
No. 200	0-1.0

- A. NYSDOT #1 Coarse Aggregate Section 703-02 – Material shall meet the requirements of NYSDOT #1 Coarse Aggregate Section 703-02 as defined in the NYSDOT “Standard Specifications” issued in May 2008 (and any subsequent revisions). The material shall meet the following gradation by weight:

25.0 mm	100
12.5 mm	90-100
6.3 mm	0-15

- B. Type B - Material shall meet the requirements of NYSDOT Coarse Aggregate Section 703-2; 50-50 Blend of #1 and #2 as defined in the NYSDOT “Standard Specifications” issued in May 2008 (and any subsequent revisions). The material shall meet the following gradation by weight:

<u>Blend</u>	
1 ½ inch	100%
1 inch	95-100%
½ inch	45-58%
¼ inch	0-15%

- C. Type D - Material shall meet the requirements of NYSDOT Concrete Sand Section 703-07 as defined in the NYSDOT “Standard Specifications” issued in May 2008 (and any subsequent revisions). The material shall meet the following gradation by weight:

3/8 inch	100
No. 4	90-100
No. 8	75-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	1-10
No. 200 (wet)	0-3

- D. Type E - Material shall meet the requirements of NYSDOT Item 304.12 Subbase Course Type 2 as defined in the NYSDOT “Standard Specifications” issued in May 2008 (and any subsequent revisions). The material shall meet the following gradation by weight:

2 inch	100
¾ inch	25-60
No. 40	5-40
No. 200	0-10

Type E select granular material is to be used for trench backfill whenever the new water main is installed under paved roads, paved shoulders, paved driveways, paved parking lots, gravel

shoulders, gravel driveways, or gravel parking lots. In addition, Type E select granular material is to be used as trench backfill whenever the centerline of the new water main is located 4 feet or closer to the edge of an asphalt pavement.

1. Cost for the use of select granular backfills is to be included in the appropriate water main payment item(s).

E. Type F - Material shall meet the requirements of NYSDOT Item 304.13 Subbase Course Type 3 as defined in the NYSDOT “Standard Specifications” issued in May 2008 (and any subsequent revisions). The material shall meet the following gradation by weight:

4 inch	100
¼ inch	30-75
No. 40	5-40
No. 200	0-10

F. Type I - Material shall meet the requirements of NYSDOT Item 203.0801 Select Granular Fill, Slope Protection Type A as defined in the NYSDOT “Standard Specifications” issued in May 2008 (and any subsequent revisions). The material shall meet the following gradation by weight:

<u>Material Size</u>	
24-inch maximum dimension	100
6-inch maximum dimension	90-100
2-inch square sieve	0-30
¼-inch sieve	0-10

G. Type J - Material shall meet the requirements of NYSDOT #1A Coarse Aggregate Section 703-02 as defined in the NYSDOT “Standard Specifications” issued in May 2008 (and any subsequent revisions). The material shall meet the following gradation by weight:

½ inch	100
¼ inch	90-100
1/8 inch	0-15
No. 200	0-1.0

H. Type K - Material shall meet the requirements of NYSDOT #2 Coarse Aggregate Section 703-02 as defined in the NYSDOT “Standard Specifications” issued in May 2008 (and any subsequent revisions). The material shall meet the following gradation by weight:

1 ½ inch	100
1 inch	90-100
½ inch	0-15
No. 200	0-1.0

Specify as Screened Gravel Only, NYSDOT Material Designation 703-0203

I. Type L - Material shall meet the requirements of NYSDOT #203.07 Select Granular Fill as defined in the NYSDOT “Standard Specifications” issued in May 2008 (and any subsequent revisions). The material shall meet the following gradation by weight:

4 inch	100
No. 40	0-70
No. 200	0-15

J. Type M - Material shall meet the requirements of NYSDOT Item #204.01 Controlled Low Strength Material (CLSM); NYSDOT Item #204.02 Controlled Low Strength Material (CLSM) (No Fly

Ash); 75 kPa to 1030 kPa equivalent to 40 psi to 150 psi. NOTE: Use #204.02 (No Fly Ash) for contact with cast iron or ductile iron pipe.

- K. Underdrain Filter Material - Material shall meet the requirements of Item 605.0901, Type 1, as defined in the NYSDOT "Standard Specifications" as issued May 2008 (and any subsequent revisions).
- L. Stone Filling (Light) - Material shall meet the gradation requirements for stone filling (light) Item 620.03 as defined in the NYSDOT "Standard Specifications" as issued May 2008 (and any subsequent revisions).
- M. Stone Filling (Medium) - Material shall meet the gradation requirements for stone filling (medium) Item 620.04 as defined in the NYSDOT "Standard Specifications" as issued May 2008 (and any subsequent revisions).
- N. Acceptance of all types of fill shall be based on the above requirements, and final acceptance shall be made by the Engineer. Such acceptance or rejection of materials shall be binding upon the Contractor.

### **2.3 PIPE BEDDING MATERIALS**

- A. Ductile Iron Pipe – Compacted backfill, suitable native material, with no aggregate larger than 2-inch size.
- B. Polyvinyl Chloride (PVC) Pipe – NYSDOT Item 203.25 Sand Backfill.
- C. High Density Polyethelene Pipe – NYSDOT Item 203.25 Sand Backfill.
- D. See construction plan details for additional information.

## **PART 3 - EXECUTION**

### **3.1 GENERAL REQUIREMENTS**

- A. The Contractor shall be responsible for providing all necessary fill materials.
- B. All excavations shall be backfilled to the original surface of the ground or to the lines and grades as shown on the Contract Drawings or as otherwise specified, or directed. Backfilling shall be done with suitable excavated materials as shown on the Contract Drawings or approved by the Engineer, and satisfactorily compacted.
- C. Disturbed pavement, including stone driveways, asphalt driveways, roadways and sidewalks shall be restored in accordance with details, materials and requirements as shown on the plans and to the satisfaction of the engineer.
- D. Trenching and related excavation work shall be executed as detailed in Section 02000.
- E. Excavated material considered by the Engineer to be unsuitable for backfilling shall not be used, and shall be stockpiled or removed from the site according to the following:
  - 1. Unsuitable material shall fall into two specific categories. The first shall be that material which would be unsuitable under any circumstances. Material containing humus, spongy material, roots, stumps, muck, peat, and any other objectionable material. This material shall be disposed of in an approved off-site spoil area.
  - 2. The second category shall consist of material which is unsatisfactory for backfill because of its moisture content at the time of excavation. This material shall be stockpiled in

approved areas on the Project site. This stockpiled material, when satisfactory for backfill, as determined by the Engineer, shall be used in other areas lacking backfill.

- F. The Engineer shall be the sole judge of what constitutes unsuitable material and into which category it falls. No extra payment shall be made for any stockpiling, rehandling, transporting or placement of any unsuitable material, the cost shall be included in the price bid. Any deficiency in backfill shall be made up in spoil, if suitable, or by imported material acceptable to the Engineer. No payment shall be made for making up any deficiency; the cost of such shall be included in the price bid.
- G. As required, the Contractor may add sufficient water during compaction to assure a complete consolidation of the material. This work shall be at no additional cost to the Owner. Where, in the opinion of the Engineer, adequate consolidation is not being obtained, density tests may be ordered at the expense of the Contractor.
- H. The Contractor shall make up any settlement of trenches or embankments with suitable material and stabilize at no additional cost to the Owner. This work shall be performed promptly and as directed by the Engineer.

### **3.2 BACKFILLING OF TRENCHES**

- A. All pipes shall be protected from lateral displacement and possible damage resulting from backfill operations through, impact or unbalanced loading, by maintaining the pipe adequately embedded as detailed on the Plans. Except where detailed or due to subsoil conditions that require the use of concrete cradle encasement, all pipe embedment shall be placed so as to insure adequate lateral and vertical stability of the installed pipe during pipe jointing and backfill operations. A sufficient amount of the specified pipe backfill material to hold the pipe in rigid alignment shall be uniformly deposited and thoroughly compacted below, on each side, as well as above each pipe laid in accordance with the limits as shown on the Contract Drawings.
- B. Pipe backfill materials placed any point below an elevation of 12 inches above the top of the pipe barrel shall be placed and compacted in layers not to exceed 6 inches in uncompacted depth and shall be done simultaneously and uniformly on both sides of the pipe to the limits as shown on the Contract Drawings. All such materials shall be graded in the trench with hand tools in such a manner that they will be placed uniformly alongside the pipe. The remainder of the trench shall be backfilled with material as shown on the standard details. When placed under pavement, utilities, and other structures this remaining backfill shall be select granular material. Each layer shall be thoroughly compacted to prevent settlement.
- C. Where trenches are constructed in, near, or across roadway ditches or other water courses, the backfill shall be protected from surface erosion.
- D. Trucks or other heavy equipment shall not be operated over pipelines until a minimum of 24 inches of backfill above the crown of the pipe has been placed and properly compacted.
- E. Backfill all excavations to the original surface of the ground or to such other grades as may be shown, specified or directed.
  - 1. Backfill with suitable excavated materials which can be satisfactorily compacted during refilling of the excavation. In the event the excavated materials are not suitable, use select fill as specified or ordered by the Engineer.
  - 2. Refill and compact settlements and repair finished work damaged by settlement at no additional cost to Owner.

- F. Backfill the zone around pipes (under, around and to a depth of 6 inches above the pipe) with suitable excavated material free of sod, debris, excavated rock and stones over 2 inches in diameter. Place the suitable material in by shovel in such a manner as not to damage pipe or appurtenances and in layers not to exceed 6 inches in depth. Compact to 95% maximum modified Proctor density.
- G. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- H. Backfill trenches under streets, roads, driveways, walks, gutters and curbs or other areas requiring structural support with select fill, or as directed by the Engineer.
- I. Place and compact the select fill or native soil in uniform layers not exceeding 6" in compacted depth. Compact to 95% maximum modified Proctor density. Maintain optimum moisture content of backfill materials to attain required compaction density. Use compaction equipment suitable for material excavated, and pipe or appurtenance installed.
- J. For other areas use native soil which was removed in the course of the construction excavations or replacement fill. Distribute stones in the backfill to prevent the formation of voids. Do not incorporate in the backfill stones over 12 inches in any one dimension.
- K. Trenches in open fields, lawn areas and wooded areas, may be backfilled by filling in the entire trench, except for the zone around the pipe and the topsoil when stripped and stockpiled, in one operation and compacting the backfill with construction equipment, leaving the fill mounded slightly over the trench. Maintain the surface over the trench during the guarantee period.  
  
For trenches in areas to be restored under the field restoration item of the bid, backfill to allow for the original depth of the topsoil which was stockpiled. Upon completion of the subsoil backfilling, place the stockpiled topsoil on top of the subsoil. Remove large rocks (10" and above) and boulders from the topsoil. The cost of this work shall be included in the field restoration item of the bid.
- L. Employ a placement method that does not disturb or damage other work. Do not backfill against unsupported foundation walls.
- M. Remove surplus backfill materials from site.
- N. Each day complete fine grading operations of the work completed the previous day in areas other than pavement. In pavement areas, complete fine grading and install temporary asphalt the same day.
- O. Fine grade by leveling disturbed areas to as close to final finish grade as possible, leaving the fill mounded slightly over the trench. Remove all debris and place temporary asphalt as specified in the bid or as directed by the Engineer. Payment for temporary asphalt shall be made under the appropriate item of the bid.

### **3.3 BACKFILLING AROUND STRUCTURES**

- A. Location of Fill Types:
  - 1. Condition 1 - In all areas outside of building area to within 6" of finished grade, except at paved, concrete or graveled areas where it is to be brought to an elevation appropriate to allow all subbase, asphalt, or concrete material to be placed to grade as shown on the contract drawings.
  - 2. Condition 2 Fill - In all fill areas within the building up to an elevation of 6" below the underside of the slab.
  - 3. Condition 3 Fill - Final 6" of fill under slab.



- B. Backfilling around structures shall not be commenced until directed by the Engineer.
- C. Prior to backfilling, a minimum of seven (7) days cure time shall elapse from the placing of cast-in-place concrete. The Contractor shall comply with any special requirements noted on the Contract Drawings. In no case shall backfill materials be allowed to fall directly on a structure or to damage the structure or its protective coatings.
- D. Backfill around structures shall be deposited in horizontal layers not more than 6- to 8-inches in thickness and shall be compacted by tamping to prevent settlement. Backfill shall be brought up evenly on all sides of structures so as not to subject the structure to unequal loadings. Do not backfill against unsupported walls or structures.
- E. Use least desirable material at bottom of fill, best at top. Evenly distribute stones in fill, none over 3" diameter within top 12" of subgrade. Remove rocks and compact each layer of fill before applying next layer. Slope to prevent ponding of water and to provide drainage away from building(s) and roadways. Dewater as required to prevent water from setting in excavated and graded areas. No backfilling will be allowed in areas full of water.
- F. At all times the Contractor shall maintain and operate proper and adequate surface and subsurface drainage methods to the satisfaction of the Engineer in order to keep the construction site dry and in such condition that placement and compaction of fill may proceed unhindered by saturation of the area. During construction, the surface of the fill area shall be left in such condition that precipitation and/or surface water will run off.
- G. Place underslab base material (Type 3 Fill) after all underslab mechanical lines, etc. have been installed. Protect lines, etc. as required.
- H. Backfill over-excavated areas as indicated in Section 02000.

### **3.4 SETTLEMENT**

- A. Repair to proper grade any settlement of slab, pavement, utility structure, lawn, etc. adversely affected by settlement within one (1) year after final acceptance of building at no expense to Owner.

END OF SECTION

## SECTION 312200 - TRENCHING

## PART 1 - GENERAL

**1.1 DESCRIPTION**

- A. Trenches for pipelines and appurtenances
- B. Maintaining trenches
- C. Encountering underground facilities
- D. Existing structures and pavements within the trench limits
- E. Trees, bushes and plantings
- F. Surplus material
- G. Dust control
- H. Voids under adjacent structures

**1.2 RELATED WORK**

- A. Section 00800 - Supplemental Conditions: Subsurface Investigation
- B. Section 01102 - Care and Protection of Property
- C. Section 01105 - Traffic Regulation
- D. Section 02221 – Pipe and Structure Backfill
- E. Section 02484 – Lawns and Grass
- F. Section 02671 – Horizontal Directional Drilling
- G. Section 02670 - Bores

**1.3 DEFINITIONS**

- A. Trenching or Excavation
  - 1. Grubbing, stripping, removing, storing and rehandling of all materials of every name and nature necessary to be removed for all purposes incidental to the construction and completion of all the work under construction;
  - 2. All dikes, ditches, flumes, cofferdams, pumping, bailing, draining, well points, or otherwise disposing of water;
  - 3. The removing and disposing of all surplus materials from the excavations in the manner specified;
  - 4. The removing and disposal of all rock materials, after rock blasting, from the trench excavations within the payment limits specified;
  - 5. The maintenance, accommodation, and protection of travel and the temporary paving of highways, roads and driveways;
  - 6. The supporting and protecting of all tracks, rails, buildings, curbs, sidewalks, pavements, overhead wires, poles, trees, vines, shrubbery, pipes, sewers, conduits or other structures or property in the vicinity of the work, whether over or underground or which appear within or adjacent to the excavations and the restoration of the same in case of settlement or other injury;
  - 7. All temporary bridging and fencing and the removing of same.

- B. Earth
  - 1. All materials such as sand, gravel, clay, loam, ashes, cinders, pavements, muck, roots or pieces of timber, soft or disintegrated rock, not requiring blasting, barring, or wedging from their original beds.
- C. Backfill
  - 1. The refilling of excavation and trenches to the line of filling indicated on the Contract Drawings or as directed using materials suitable for refilling of excavations and trenches; and the compacting of all materials used in filling or refilling by rolling, ramming, watering, puddling, etc., as may be required.
- D. Spoil
  - 1. Surplus excavated materials not required or not suitable for backfill or embankments.
- E. Embankments
  - 1. Fills constructed above the original surface of the ground or such other elevation as specified or directed.
- F. Limiting Subgrade
  - 1. The underside of the pipe barrel for pipelines.
- G. Excavation Below Subgrade
  - 1. Excavation below the limiting subgrade of pipelines.
  - 2. Excavate to such new lines and grades as required when material encountered at the limiting subgrade is not suitable for proper support of pipelines.

## PART 2 - PRODUCTS

### 2.1 FILL MATERIALS

- A. Type 1 Select Fill
- B. Type 2 Select Fill
- C. Type 5 Select Fill

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Identify required lines, levels, contours, and datum. Locate all utilities and underground obstructions prior to starting excavations, including cutting pavements.
- B. Cut pavement and pavement base over the proposed trench before excavating for pipeline installation. Utilize a jackhammer, wheel cutter ("Pizza Cutter") or power driven saw. Cut pavement to the required trench width.
- C. Relocate, remove and later restore, or replace existing structures in the proposed trench limits and those structures which would be damaged or impede progress.
- D. Protect the trunks of trees adjacent to the Work that are not to be cut. Tie back overhanging branches and limbs not to be cut to prevent injury from excavating machinery or any other operations related to the work.
- E. Do not cut or remove branches, limbs and roots except for those plantings included in clearing and grubbing areas. In the case of unavoidable damage to plantings, neatly trim the injured portions without splitting or crushing.

- F. Remove and temporarily store in soil, any plants and flowers which would be injured by the work. Replant in their original position after the Work has been substantially completed. Maintain until re-established. Replace with plantings of the same kind, quality and size that existed prior to construction when the original plantings die or their growth, beauty or usefulness is diminished as a result of the work.
- G. Maintain support of existing power, lighting, telephone, traffic control and utility poles adjacent to excavations as required by the owners of the poles.
- H. Do not operate on paved surfaces equipment which has treads or wheels that would cut or damage the pavement.
- I. Avoid damage to existing pavement other than pavement within the limits of the trench. Provide the pads of outriggers with protective covers, or place planks or timbers under the pads to prevent damaged to pavements. No payment shall be made for replacement or restoration of pavements beyond the payment limits which are damaged during the Work.
- J. Strip and stockpile topsoil in areas to be restored as field for eventual redistribution to its original profile location. Strip the entire depth of topsoil to a width of the trench payment limit plus 2 feet or greater as may be required by conditions or other installations. Stockpile topsoil on the parcel of land from which it was stripped at locations approved by the ENGINEER. Remove 10" and larger rocks from the topsoil.

### **3.2 EXCAVATION**

- A. Excavate trenches to the lines and grades specified and as required. Backfill with special granular materials, concrete or other materials as directed by the ENGINEER, any excavated space carried beyond or below the lines and grades shown on the Contract Drawings, or as directed by the ENGINEER. Backfill unauthorized excavations at the CONTRACTOR's expense.
- B. Excavate the trench sides vertically between the centerline of the pipe and an elevation 1 foot above the top of the pipe unless this conflicts with the requirements of OSHA. In the case of rock excavation, excavate to 6 inches below invert elevation of pipe and 12 inches wider than the nominal pipe diameter. Maintain a minimum clearance of 6 inches around the pipe.
- C. Provide and maintain proper and satisfactory means and devices for the removal of all water entering the excavations, and remove all such water as fast as it may collect, in such a manner as shall not interfere with the progression of the work or the proper placing of pipes, or other work.
- D. Prevent damage to surrounding pavement, gutters and structures while excavating.
- E. Furnish, place and maintain such sheeting, bracing and shoring as may be required to support the sides and ends of excavations in such manner as to prevent any movement which could, in any way, damage the pipe, structures, or other work; diminish the width necessary for construction; otherwise damage or delay the work of the Contract; endanger existing structures, pipes or pavements; or cause the excavation limits to exceed the right-of-way limits.

In no case will bracing be permitted against pipes or structures in trenches or other excavations.

Drive sheeting vertically with the edges tight together as the excavation progresses, and in such manner as to maintain pressure against the original ground at all times. Design all bracing to maintain sheeting in its proper position.

The adequacy of all sheeting and bracing is the sole responsibility of the CONTRACTOR.

- Remove and dispose all material which slides, falls or caves into the established limits of excavations due to any cause whatsoever, at the CONTRACTOR's expense. No extra compensation will be paid to the CONTRACTOR for any materials ordered for refilling the void areas left by the slide, fall or cave-in.
- F. Discontinue machine excavation in the vicinity of pipes, conduits and other underground structures and facilities and complete the excavation with hand tools as required by Industrial Code Rule 753.
  - G. When determination of the exact location of a pipe or other underground structure is necessary for completing the work properly, excavate test holes to determine such locations.
  - H. When the bottom of any excavation is taken out beyond the limits indicated or prescribed, backfill and compact the resulting void with Type 1 or 2 Select Fill compacted to 95% maximum modified Proctor density.
  - I. Remove material which, in the opinion of the ENGINEER, is found to be unsuitable for foundation of the pipeline and appurtenances during excavation. Payment shall be made under the appropriate item of the bid.
  - J. Use suitable surplus excavated materials for backfill of excavations in rock or to replace other materials unacceptable for use as backfill except in areas which require select backfill. Surplus excavated materials may be stockpiled at appropriate locations as needed for future use.
  - K. Remove from the site all surplus excavated materials not needed.
  - L. Replace existing structures (including concrete gutters, concrete sidewalks and curbs that are crossed by the proposed water main) and stone shoulders or other stone areas which are damaged or removed during the Work.
  - M. When existing driveway culverts are encountered, replace with adequate size (minimum 12-inch diameter). Methods, materials and alignment to be determined by the applicable highway department.
  - N. Minimize the creation and dispersion of dust. Sweep and sprinkle with water as required by conditions.
  - O. Completely fill all voids which occur under existing sidewalks, curbs, gutters or other structures during the excavation with Type 5 Select Fill.
  - P. Place and maintain a 2" thick layer of compacted temporary asphalt over backfilled trenches until permanent pavement is placed. Materials and workmanship for temporary pavement shall conform to the State of New York Department of Transportation specifications. The plant mix (cold patch or other approved material) shall be suitable for providing a smooth surface for traffic. Temporary pavement, if required, shall be paid for under the appropriate item in the bid.

END OF SECTION

## SECTION 312300 – SOIL COMPACTION

## PART 1 - GENERAL

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.

**1.2 DESCRIPTION OF WORK**

- A. Extent of soil compaction work includes, but is not limited to the following:
  - 1. Requirements for soils and backfill materials consolidation and compaction.

**1.3 RELATED WORK**

- A. Section 02000 – Excavation, Grading, and Shoring
- B. Section 02221 – Pipe Structure and Backfill
- C. Section 02660 – Water Distribution Piping
- D. Section 2724 – Sanitary Sewer Force Main
- E. Section 02930 – Seeding

**1.4 QUALITY ASSURANCE**

- A. The taking of samples and the performing of field compaction density tests and laboratory maximum density tests shall be done for the Contractor by an approved independent testing laboratory.
- B. Determine optimum moisture content of various soil and granular materials in accordance with ASTM D1557, Modified Proctor Tests.
- C. Provide on-site at least one person who shall supervise the soil compaction operations, and who shall be thoroughly familiar with the various types of compaction equipment, proper compacting techniques and methods, and soils behavior, and who shall direct the compaction operations.
- D. It is the responsibility of the Contractor to select, furnish and properly maintain equipment which will compact the fill uniformly to the required density.

**1.5 SUBMITTALS**

- A. List of compaction plans of proposed compaction equipment and description.
- B. The results of the laboratory maximum density tests, certified by the testing laboratory for the various soil and granular materials utilized on the job.
- C. All laboratory field compaction test and re-test reports.

**1.6 JOB CONDITIONS**

- A. Compaction shall not take place in freezing weather or when materials to be compacted are frozen, too wet or moist, or too dry.
- B. Schedule the work to allow ample time for laboratory tests and to permit the collecting of samples and the performing of field density tests during the backfilling and compaction operations.

- C. Protect pipes, structures, and all other subsurface work from displacement or injury during compaction operations.
- D. All operations under this section of the specifications will be subject to continuous inspection by the Engineer and a soils testing laboratory approved by the Engineer. The Engineer and the testing laboratory will determine and be the sole judge of the conformance of materials, workmanship, and compaction with the requirements of the contract documents.

## PART 2 - PRODUCTS

### 2.1 COMPACTION

- A. Utilize the proper compaction methods and equipment to suit the soils and conditions encountered.

### 2.2 LABORATORY TEST REPORTS

- A. As a minimum, the laboratory maximum density testing reports shall contain the following:
  - 1. Laboratory's name.
  - 2. Date, time, and specific location from which sample was taken and name of person who collected the sample.
  - 3. Moisture - Density Curve plotted on graph paper to as large a scale as is practical with all points used to derive the curve being clearly visible.
  - 4. Designation of the test method used.
  - 5. The optimum density and moisture content.
  - 6. A description of the sample.
  - 7. The date the test was performed and the person who performed the test.
  - 8. The project name, identification, and contractor's name.
  - 9. The signature of a responsible officer of the testing laboratory certifying to the information contained in the report.
- B. As a minimum, the field compaction density testing reports shall contain the following:
  - 1. Laboratory's name.
  - 2. Date, time, depth, and specific location at which the test was made and the person's name who performed the test.
  - 3. Designation of the test method used.
  - 4. Designation of the material being tested.
  - 5. Test number.
  - 6. In place dry density and moisture content.
  - 7. Optimum density and moisture content.
  - 8. Percentage of optimum density achieved.
  - 9. The project name, identification, and contractor's name.
  - 10. The signature of a responsible officer of the testing laboratory certifying to the information contained in the report.

### 2.3 OTHER MATERIALS

- A. All other materials which are required to achieve adequate compaction shall be as selected by contractor subject to approval of Engineer.

## PART 3 - EXECUTION

**3.1 INSPECTION**

- A. Verify that layers of material are no thicker than the maximum thicknesses specified in other Sections.
- B. Verify that moisture content is nearly optimum.
- C. Do not begin compaction operations until conditions are satisfactory.

**3.2 PERFORMANCE**

- A. Compaction densities shown are percentages of the maximum density obtainable at optimum moisture content as determined by ASTM D1557, Method C.
- B. Uniformly spread each layer. Moisten or dry each layer of material to achieve optimum moisture content. Unless otherwise specified or directed by Engineer, compact each layer of material to the following required densities:

Location	Modified Proctor Test Density
Under concrete slab, foundations, and footings	95%*
Backfill at Structures	95%
Undercut Backfill	95%
General Fill at Buildings	93%
Structural Engineered Fill at Bldgs	95%
Embankments	95%
Paved Areas	95%
Impervious Barriers	95%
Trench Backfill	95%
- Under Traffic Areas (including sidewalks)	95%
- Non-Traffic areas	90%
Other Landscaped Areas	90%

\*100% for granular material if specified

**3.3 FIELD QUALITY CONTROL**

- A. Perform a laboratory maximum density test for each type of soil proposed for use or encountered in the work. Determine optimum moisture content in accordance with ASTM D1557, Method C.
- B. Engineer will designate the time, date, and exact location of all field compaction density tests. Field density tests may be ordered by the Engineer at his discretion in accordance with the following average frequencies:
  1. General: One test for each type of fill and at each change in material or supplier.



2. Structures and Roads: One test for each layer of compacted fill and base material at intervals of approximately 200 feet along structure walls and roadways but not less than one test per 2,000 square feet of pavement area.
  3. Under Structures, Foundations, Slabs, and Footings: One test for every 75 cubic yards of compacted fill or backfill but not less than two per lift.
  4. Landscaped Areas: One test per 300 cubic yards of compacted fill or backfill but not less than two per lift.
- C. Field density and moisture testing shall conform to the requirements of ASTM D1556 (sand core) or D2922 and ASTM D3017 (nuclear density). Soils shall be described in accordance with ASTM D2488, Visual-Manual Procedure.
- D. If materials fail to meet its specified compaction, grading, etc., the Contractor shall remove, replace and retest the material until the specified parameters are achieved.
- E. The Contractor is responsible for providing all soils testing and re-testing and shall include all costs in the appropriate items bid.

### **3.4 COORDINATION**

- A. Provide all assistance and cooperation during testing and coordinate operations to allow ample time for the required sampling and testing.

### **3.5 ADJUST AND CLEAN**

- A. Replace or repair any pipe, structure, or other work which has been displaced, damaged, or injured.
- B. Compacted soils not meeting compaction densities shall be re-excavated, re-compacted, and re-tested until all requirements are met. All costs of testing shall be borne by the Contractor.

END OF SECTION

## SECTION 312400 – EROSION CONTROL

## PART 1 - GENERAL

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

**1.2 WORK OF THIS SECTION**

- A. Work covered in this section includes the control of erosion, siltation, and sedimentation. The Contractor and the Engineer shall work together to determine the need for erosion control.

**1.3 RELATED WORK**

- A. Section 02000 - Excavation, Grading and Shoring
- B. Section 02160 - Clearing and Grubbing
- C. Section 02221 - Pipe and Structure Backfill
- D. Section 02936 - Seeding

**1.4 PROJECT REQUIREMENTS**

- A. Take every reasonable precaution and do whatever is necessary to avoid any erosion and to prevent silting of rivers, streams, impoundments, and drainage ditches, and swales.
- B. The exposure of uncompleted cut slopes, embankments, trench excavations, and site graded areas shall be kept as short as possible. Initiate seeding and other erosion control measures on each segment as soon as reasonably possible.
- C. Should it become necessary to suspend construction for any length of time, shape all excavated and graded areas in such a manner that runoff will be intercepted and diverted to points where minimal erosion will occur. Provide and maintain temporary erosion and sediment control measures, such as berms, dikes, slope drains, silt stops, and sedimentation basins, until permanent drainage facilities and erosion control features have been completed and are operative.
- D. Fine material placed or exposed during the work shall be so handled and treated as to minimize the possibility of its reaching any surface waters. Use diversion channels, dikes, sediment traps, or any other effective control measures.
- E. Provide silt stops wherever erosion control measures may not be totally capable of controlling erosion, such as in drainage channels and where slopes may exist.
- F. Before water is allowed to flow in any ditch, swale, or channel, install the permanent erosion control measures in the waterway so that the waterway will be safe against erosion.
- G. Take special precautions in the use of construction equipment to minimize erosion. Do not leave wheel tracks where erosion might begin. Prevent direct discharge from dewatering pumps and surface runoff from the construction sites to storm sewers, culverts, streams or ditches. Intercept and conduct surface runoff and discharge from dewatering pumps to siltation ponds before discharging to natural drainage channels.
- H. Disturbance of lands and waters outside the limits of construction is prohibited, except as may be found necessary and approved by the Engineer.

- I. The requirements of this section also apply to project-related construction activities away from the project site, such as at borrow pits, off-site storage areas, and haul and work roads.
- J. Mulching shall follow the seeding operation by not more than 24 hours.
- K. Should any protective measures employed indicate any deficiencies or erosion taking place, immediately provide additional materials or employ different techniques to correct the situation and to prevent subsequent erosion.
- L. Continue erosion control measures until the permanent measures have been sufficiently established and are capable of controlling erosion on their own.
- M. Comply with all federal, state, and local laws, ordinances, rules, and regulations.

## **1.5 QUALITY CONTROL**

- A. Provide at least one person who shall be present at all times during erosion control operations and who shall be thoroughly familiar with the types of materials being installed and the best methods for their installation and who shall direct all work performed under this section.
- B. Material manufacturers and vendors shall be reputable, qualified firms regularly engaged in producing the required types of materials.
- C. Protect and maintain all areas disturbed by the work, such that erosion is adequately controlled and silt and sediments are not allowed to flow into any watercourse, onto adjacent properties, or into storm drains.

## **PART 2 - PRODUCTS**

### **2.1 HAY AND STRAW MULCH**

- A. General: Hay and straw mulches shall be reasonably free from swamp grass, weeds, twigs, debris, and other deleterious material, and free from rot, mold, primary noxious weed seeds, and rough or woody materials. Mulches containing mature seed of species which would volunteer and be detrimental to the permanent seeding, or would result in overseeding, or would produce growth which is aesthetically unpleasing, is not permitted.
- B. Hay Mulch: Properly aired native hay, Sudan grass hay, broomsedge hay, legume hay, or similar hay or grass mowings. When air-dried in the loose state, the contents of the representative bale shall lose not more than fifteen (15) percent of the resulting air-dry weight of the bale. Apply at the rate of 2 to 3 tons/acre, or at 1.5 tons/acre when a net or a mulch stabilizer is used with the mulch.
- C. Straw Mulch: Threshed plant residue of oats, wheat, barley, rye, or rice from which grain has been removed. Apply at the rate of 2 to 3 tons/acre or at 1.5 tons/acre when a net or a mulch stabilizer is used with the mulch.
- D. Mulch Stabilizers: "TRU-Max SMM" by Finn Corporation applied at 2,500 pounds/acre, "Soiltac" by Soilworks, applied at 40 gallons/acre, or asphalt binder, AASHTO M140, Type SS-1 or RS-1 as applicable, applied at the rate of 400 gallons/acre, or approved equal.
- E. Temporary Type Mulch Nets: Paper yard, approximately 0.05" in diameter, woven in to a net with approximate openings of 7/8" by 1/2" and weighing about 0.20 lbs/sy.
- F. Permanent Type Mulch Nets: plastic or nylon mesh netting with approximate openings of 3/8" by 3/4".

**2.2 MATTING/BLANKETS (if required)**

- A. Nomenclature: The various materials under this paragraph are sometimes referred to as "matting" and "blankets". These words are interchangeably used throughout this section, but the meanings shall be the same.
- B. Jute Matting: Undyed and unbleached jute yarn woven into a uniform open, plain weave mesh, furnished in rolled strips conforming to the following physical requirements:

Width: 48", ±1"  
78 warp ends per width of cloth  
41 weft ends per yard

Weight: 1.22-1.80 lbs./LY, ±5%

- C. Excelsior Matting: Uniform web of interlocking wood excelsior fibers with a backing of mulchnet fabric on one side only. The mulchnet shall be woven of either twisted paper chord or cotton cord. Excelsior matting shall be furnished in rolled strips and shall conform to the following physical requirements:

Width: 36", ±1"

Weight: 0.80 lbs/sy, ±5%

- D. Erosion Control Mulching Blanket: EBX Series Erosion Control Blankets by Carthage Mills, "Premier Straw Blanket" by American Excelsior Products, or approved equivalent.
- E. Staples: No. 11 (or heavier) plain iron wire made from at least 12" lengths of wire bent to form "U" of 1½" to 2" width. Use longer staples for loose soils or where otherwise required.

**2.3 HYDROMULCHES (if required)**

- A. Hydromulches are not permitted where the slope of the ground surface exceeds 10 percent.
- B. Wood fiber mulch with tackifier, "Terra-Wood" with Tacking Agent III by Terra-Mulch, "Fibermulch II" with Dri-Water Hydro Mix Tackifier, or approved equal. Apply wood fibers at the rate of 500 lbs./acre and tackifier at the rate of 40-45 gallons/acre.
- C. Paper mulch equal to "Second Nature Paper Fiber Mulch" by Central Fiber, "Green Choice EZ Spray Hydraulic Mulch" by Phoenix Paper Products, or approved equal applied at the rate of 1,200 lbs./acre.

**2.4 SEED AND SOD FOR EROSION CONTROL**

- A. For temporary control: See Section 02936.
- B. For permanent control: See Section 02936.

**2.5 HAY BALES FOR EROSION CONTROL**

- A. Rectangular shaped bales of hay or straw, weighing at least 40 pounds per bale, free from primary noxious weed seeds and rough or woody materials.

**2.6 SILT FENCES (if required)**

- A. Filter cloth shall be FX-11M by Carthage Mills, GT-140 by Skaps Industries, or approved equal and shall meet the following requirements:

1. Silt Fence Fabric:

<u>Fabric Properties</u>	<u>Minimum Acceptable Value</u>	<u>Test Method</u>
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (lbs)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D3786
Slurry Flow Rate (gal/min/sf)	0.3	
Equivalent Opening Size	40-80	US Std. Sieve SW-02215
Ultraviolet Radiation Stability (%)	90	ASTM G-26

B. Other materials shall be defined on the silt fence detail shown on the Contract Documents.

C. Pre-assembled silt fence which is complete with U.V. stabilized filter fabric (minimum 36-inch) high-strength polypropylene netting and pre-attached hardwood stakes may also be used. The preassembled reinforced silt fence shall be Envirofence as manufactured by Tencato Mirafi, or approved equivalent.

**2.7 STABILIZED CONSTRUCTION ENTRANCE (if required)**

A. Stone Type B - Material shall be clean, sound, crushed stone of uniform quality. It shall be a 50-50 mixture of NYSDOT size designation #1 and #2 stone as per NYSDOT Standard Specifications dated May 2008, Section 703-02 (and any subsequent revisions).

B. Filter cloth designated as Type B meeting New York guidelines for Urban Erosion and Sediment Control for heavy duty haul roads, rough graded, as listed below. Acceptable materials are FX-66 by Carthage Mills, American-made Mirafi 600X by Tencate Mirafi, or approved equal. The filter cloth shall be woven fabric of only continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydrocarbons, mildew; rot resistant and conform to the fabric properties listed below:

<u>Fabric Properties</u>	<u>Rough Graded</u>	<u>Test Method</u>
Grab Tensile Strength (lbs) Strength (lbs)	220	ASTM D1682
Elongation at Failure (%)	60	ASTM D1682
Mullen Burst Strength (lbs)	430	ASTM D3786
Puncture Strength (lbs)	125	ASTM D751 modified
Equivalent Opening Size	40-80	US St Sieve CW-00215

**2.8 CHECK DAMS (if required)**

- A. Light Stone Fill - Material shall be graded stone filling (light) as designated in Section 02221 of this specification.
- B. The gradation of materials furnished will be accepted or rejected based upon a visual examination of the material by the Engineer.
- C. Filter cloth shall be FX-11M by Carthage Mills, GT-140 by Skaps Industries, or approved equal and shall meet the same requirements as for silt fence described in this section.
- D. The purpose of the check dams shall be to reduce erosion by restricting the velocity of flow in the swale/channel.

**2.9 TEMPORARY SEDIMENT TRAP (if required)**

- A. Clear, grub and strip the area to be excavated of all vegetation and root mat. Required storage shall be 1,800 cubic feet per acre of drainage area. The complete drainage area shall not exceed 5 acres.
- B. Sideslopes shall be 1:1 or flatter on cut slopes and 2 horizontal to 1 vertical or flatter on fill slopes.
- C. Stone check dam or other pipe outlet with seepage collar shall be provided.

PART 3 - EXECUTION

**3.1 HAY AND STRAW MULCHING**

- A. Install hay or straw mulch immediately after each area has been properly prepared. When permanent seed or seed for erosion control is sown prior to placing the mulch, place mulch on seeded areas within 24 hours after seeding. Engineer may authorize the blowing of chopped mulch provided that 95 percent of the mulch fibers will be 6" or more in length and that it can be applied in such a manner that there will be a minimum amount of matting that would retard the growth of plants. Hay mulch should cover the ground enough to shade it, but the mulch should not be so thick that a person standing cannot see the ground through the mulch. Remove matted mulch or branches.
- B. Where mild winds may blow the mulch, or when ground slopes exceed 15 percent, or when otherwise required to maintain the mulch firmly in place, apply a system of pegs and strings, a chemical stabilizer, or temporary type netting to the mulch. Unless otherwise directed, remove the strings and netting prior to the acceptance of the work.
- C. Where high winds exist, or heavy rainstorms are likely, or where ground surfaces are steep, or where other conditions require, apply temporary type netting over the mulch and take whatever measures are necessary to maintain the mulch firmly in place.

- D. Unless otherwise specified, the use of permanent type netting is not permitted without the prior approval of the Engineer.

### **3.2 MATTING/BLANKETS - GENERAL (if required)**

- A. The use of mulch with matting is not permitted, however, a 4" to 6" overlap of mulch over the edge of matting is permissible.
- B. Prepare surfaces of ditches and slopes to conform to the grades, contours and cross sections shown on the Drawings and finish to a smooth and even condition with all debris, roots, stone, and lumps raked out and removed. Loosen the soil surface to permit bedding of the matting. Unless otherwise noted, seed prior to the placement of the matting.
- C. Unroll matting parallel to the direction of flow of water and loosely drape, without folds or stretching, so that continuous ground contact is maintained.
- D. The ditches and swales, and on slopes, each upslope and each downslope end of each piece of matting shall be placed in a 6" trench, stapled at 12" on center, backfilled, and tamped. Similarly, bury edges of matting along the edges of catch basins and other structures. Engineer may require that any other edge, exposed to more than normal flow of water, be buried in a similar fashion.
- E. Tightly secure matting to the soil by staples driven approximately vertically into the ground, flush with the surface of the matting. In driving the staples, take care not to form depressions or bulges in the surface of the matting.
- F. Decrease the specified spacing of staples when varying factors, such as the season of the year or the amount of water encountered or anticipated, requires additional anchoring.
- G. Refer to the following paragraphs for additional requirements on the placement and stapling of matting.

### **3.3 JUTE MATTING (if required)**

- A. Where strips are laid parallel or meet, as in a tee, they shall be overlapped at least 4". Overlap ends at least 6" shingle fashion.
- B. Space check slots, built at right angles to the direction of flow of water, so that one check slot or one end occurs within each 50 feet of length of slope. Construct check slots by placing a tight fold of matting at least six (6) inches vertically into the ground. These shall be tamped the same as the upslope ends.
- C. Press jute matting onto the ground with a light lawn roller or other satisfactory means.
- D. On slopes flatter than 1:4, place staples not more than 3 feet apart in three rows, for each strip, with one row along each edge and one row alternately spaced down the center. On grades 1:4 or steeper, place staples in the same three rows, but spaced 2 feet. On lapping edges, double the number of staples, with the spacing halved. Ends of matting and all required check slots shall have staples placed every foot. Matting placed adjacent to boulders or other obstructions shall be stapled with no spaces between the staples.
- E. Spread additional seed over jute matting, particularly those locations disturbed by the building of slots.

### **3.4 EXCELSIOR MATTING (if required)**

- A. Where strips of excelsior matting are laid end to end, butt the adjoining ends.
- B. When adjoining rolls of excelsior matting are laid parallel to one another, butt the matting snugly.

- C. On slopes flatter than 1:4, place staples not more than 3 feet apart in three rows, for each strip, with one row along each edge and one row alternately spaced down the center. On grades 1:4 or steeper, place staples in the same three rows, but spaced 2 feet apart. Ends of matting shall have staples placed every foot. Matting placed adjacent to boulders or other obstructions shall be stapled with no spaces between the staples.

### **3.5 EROSION CONTROL MULCHING BLANKET (if required)**

- A. Where one roll ends and a second roll begins, the upslope piece shall be brought over the end of the downslope roll so that there is a 12-inch overlap, placed in a 4-inch deep trench, stapled at 12 inches on center, backfilled, and tamped.
- B. On slopes where two or more widths of blanket are applied, the two edges shall be overlapped 4 inches and stapled at 12-inch intervals along the exposed edge of the lap joint.
- C. Staple the body of the blanket in a grid pattern with staples 3 feet on center, each way.

### **3.6 SEED FOR EROSION CONTROL**

- A. Sow seed when soils are moderately dry and when wind does not exceed five miles per hour or as directed by the Engineer.
- B. Areas which will be regraded or otherwise disturbed later during construction may be ordered to be seeded with rye grass to obtain temporary control. The seed shall be sown at the rate of approximately one pound per 1,000 square feet, on the pure live seed basis.

### **3.7 HAY BALES AND SILT FENCES**

- A. Provide hay bales or silt fences, as required, for the temporary control of erosion and to stop silt and sediment from reaching surface waters, adjacent properties, or entering catch basins, or damaging the work.
- B. Stake the hay bales to hold them firmly in place. Use a sufficient number of bales to accommodate runoff without causing any flooding and to adequately store any silt, sediment, and debris reaching them.
- C. Erect silt fences and bury bottom edge in accordance with the manufacturer's recommended installation instructions. Provide a sufficient length of fence to accommodate runoff without causing any flooding and to adequately store any silt, sediment, and debris reaching it.
- D. Maintain and leave hay bales and silt fences in place until permanent erosion control measures have stopped all erosion and siltation.

### **3.8 STABILIZED CONSTRUCTION ENTRANCES (if required)**

- A. Stabilized pads of aggregate underlain with filter cloth shall be constructed as shown on the Contract Drawings.
- B. Filter cloth shall be placed over the entire area to be covered with aggregate prior to placing of the stone.

### **3.9 CHECK DAMS (if required)**

- A. Stone filling shall be placed in a manner that will produce a reasonable well-graded mass of stone with smaller fragments filling the space between the larger ones, so as to result in the minimum practicable percentage of voids.



- B. Inspect the check dams after each runoff event. Correct all damage immediately. Replace stones as needed to maintain cross sections of the structure.
- C. Remove sediment accumulated behind the dam as needed to allow swale/channel to drain through the stone check dam and prevent large flows from carrying sediment over the dams.
- D. Removed sediment shall be properly disposed of and in a manner not to erode.

### **3.10 TEMPORARY SEDIMENT TRAP**

- A. Sediment traps shall be maintained throughout the duration of the contract or until the drainage area has been properly stabilized as approved by the Engineer.
- B. Sediment shall be removed and trap restored to its original dimensions when sediment has accumulated to 1/2 the design depth of the trap.
- C. Removed sediment shall be properly disposed of and in a manner not to erode.
- D. Inspect the sediment trap after each runoff event. Correct all damage immediately.

### **3.11 MAINTENANCE**

- A. If any staples become loosened or raised, or if any matting becomes loose, torn, or undermined, or if any temporary erosion and sediment control measures are disturbed, repair them immediately.
- B. If the seed is washed out before germination, repair any damage, refertilize, and reseed.
- C. Maintain mulched and matted areas, silt stops, and other temporary control measures until the permanent control measures are established and no further erosion is likely.
- D. All sediment spilled, dropped, or washed onto the driveway or public right-of-way shall be removed immediately.
- E. Maintain ditches and swales at all times so that they effectively drain. Refill, reshape, and recompact where ruts or erosion occurs.
- F. Maintain areas temporarily seeded including repair of all damages, re-seeding, and refertilizing.

END OF SECTION

## SECTION 312500 – ROCK EXCAVATION

## PART 1 - GENERAL

**1.1 DESCRIPTION**

## A. Work Specified

1. The Contractor shall furnish all labor, materials, equipment, and incidentals necessary for rock excavation for construction of structures and pipelines as shown and specified. Disposal of excavated rock material is included in this item.
2. This item includes backfill of rock excavations with acceptable materials as defined in other Related Work.

**1.2 RELATED WORK**

- A. Section 02221 - Pipe and Structure Backfill

**1.3 SUBMITTALS**

- A. Before any rock removal begins, the Contractor shall obtain all permits and licenses required by governing authorities having jurisdiction and supply certified copies to the Engineer.
- B. Submit procedures and list equipment to be used.

## PART 2 - PRODUCTS

**2.1 DEFINITIONS**

- A. Rock shall comprise material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 0.5 cu. Yd, for excavation and that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted.

1. Late-model, track-mounted hydraulic excavator; equipped with a 42-inch wide , maximum, short-tip-radius rock bucket; rated at not less than 138-hp (103-kW) flywheel power with bucket-curling force of not less than 28,090 lbf and stick-crowd force of not less than 18,650 lbf; measured according to SAE J-1179.

- 1.

## PART 3 - EXECUTION

**3.1 GENERAL**

## A. Limits of Rock Excavation

1. Structures:
  - a. The lowest elevation of the structure, manhole, pump station, etc. at each location or as directed by the Engineer.
  - b. The original surface of the rock.
  - c. Vertical planes located 12 inches outside the footing or as shown on the Contract Drawings.
2. Pipe Trenches: Excavate to 6 inches below invert elevation of pipe and 24 inches wider than pipe diameter.

- 
- B. The rock shall be uncovered prior to removal in sections acceptable to the Engineer so that it may be measured.

### **3.2 METHODS OF REMOVAL**

- A. Mechanical Method
  - 1. Excavate and remove rock by the mechanical method. Hammer or drill holes and utilize tools, wedges, or expansive disintegration compounds to fracture rock.

### **3.3 DISPOSAL**

- A. The excavated rock shall be disposed of as spoil and shall be replaced with Select material for backfilling.
- B. Correct unauthorized rock removal with backfill material, at the sole expense of the Contractor.

END OF SECTION

## SECTION 312600 - DEWATERING

## PART 1 - GENERAL

**1.1 WORK OF THIS SECTION**

- A. Work covered by this section includes the maintenance of trenches and structural excavations free of water. The Contractor shall make his own determination as to required dewatering operations necessary to complete the work.

**1.2 RELATED WORK**

- A. Section 02000 - Excavation, Grading, and Shoring
- B. Section 02221 - Pipe and Structure Backfill

**1.3 QUALITY ASSURANCE**

- A. Unless otherwise noted or approved by the Engineer, the placement of work shall be in a dry trench.
- B. The Contractor shall be required to ascertain the complete extent of all permits required governing dewatering operations, and shall be bound by their conditions and provisions.
- C. Conduct operations in a manner which will keep the work free of standing and flowing water and dispose the water so as not to damage or create a nuisance to the work, the public, surface, groundwaters, and adjacent properties.
- D. The accumulation of liquids, ice and snow in excavation, trenches, areas to be graded, and adjacent areas during construction is not permitted.

## PART 2 - PRODUCTS

**2.1 MATERIALS**

- A. Provide all equipment and materials necessary to perform dewatering operations in a safe and satisfactory manner.

**2.2 NOISE SUPPRESSION ENCLOSURES (if required)**

- A. Minimum requirements: 3/8-inch plywood enclosure lined with 2-inch rigid insulation.

## PART 3 - EXECUTION

**3.1 PERFORMANCE**

- A. All water removed from the trenches or excavations by pumping, bailing, siphoning, well-points, or other means shall be disposed of in such a manner so as to avoid damage to the work, work of other Contractors, surface and ground water, persons or property. Unless otherwise permitted by the Engineer, groundwater encountered within the limits of excavation shall be depressed to an elevation not less than 12 inches below the bottom thereof before pipe laying or concreting is started, and shall be so maintained until concrete and joint material have attained adequate strength.
- B. The Contractor shall not discharge water from dewatering operations directly into any line or intermittent stream, channel, wetlands or surface water. The Contractor shall not discharge water from dewatering operations directly into the storm or sanitary sewer system without prior approval

of the Engineer. If in the opinion of the Engineer, water from dewatering operations contains unacceptable amounts of sediment, the water shall be treated by filtration, sedimentation basins, or other methods to reduce the amount of sediment contained in the water to allowable levels, as acceptable to the Engineer, prior to disposal.

- C. Upon completion of the section wherein the operations have been performed, the Contractor shall remove from the catch basins, ditches, and swales, all mud, silt, debris, and other accumulations discharged to these various locations. The Contractor is responsible for leaving them in a condition similar to that which existed prior to his operations. Proper control measures shall be employed, so as to minimize siltation and erosion in and adjacent to the area of work.

### **3.2 PROTECTION**

- A. Provide adequate protection from the effects of possible uplift due to storm or groundwater where buoyancy might lift installed work or cause joint or structure failure during construction.
- B. Protect the interior of installed work from the entering and accumulation of liquids, ice, and snow. Immediately remove and dispose any accumulation which may occur.

### **3.3 ADJUST AND CLEAN**

- A. Adjust, repair, replace, or clean all work, surfaces, and property which may have been damaged as a result of any dewatering operation.

END OF SECTION

## SECTION 321216 – ASPHALT CONCRETE PAVING

## PART 1 - GENERAL

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

**1.2 DESCRIPTION OF WORK**

- A. Work of this Section includes but is not limited to:
  - 1. Aggregates
  - 2. Hot Mix Asphalt Concrete
  - 3. Liquid Asphalts
  - 4. Geotextile Support Fabric
- B. Deliver all container materials in manufacturer's standard, unopened containers with labels legible and intact. Store and protect from damage, freezing, or sunlight and heat, if required of individual product.
- C. Store all materials and other items where damage and/or contamination will not occur.

**1.3 DEFINITIONS**

- A. Pavement Area: The full width of hard bituminous road, parking surfaces, and asphalt sidewalks as shown on the Drawings.
- B. NYSDOT: New York State Department of Transportation
- C. NYSS: New York State Department of Transportation Standard Specifications dated May 1, 2008 (and any subsequent revisions).

**1.4 QUALITY ASSURANCE**

- A. Provide at least one person who shall be present at all times during the execution of this portion of the work, and who shall be thoroughly qualified and experienced in the placing of the type of pavements specified and who shall direct all work performed under this section.
- B. Comply with the referenced portions of NYSS.
- C. All testing shall be performed by an approved testing laboratory. The Engineer may use the testing laboratory for inspection services.
- D. Use only the materials and job-mix formula approved by the Engineer. Failure to consistently meet the approved job-mix formula shall be sufficient cause for the Engineer to prohibit the use of the asphalt supplier.
- E. All finished paved surfaces shall be smooth, even, and free from surface defects and irregularities. Edges shall be straight, and shall meet existing pavements smoothly. Pavement shall present a smooth, continuous, and workmanlike appearance, free from patch work, rough edges, spalling areas, potholes, depressions, bumps, and other defects. The finished installation shall meet with the complete approval of the Engineer and Owner with respect to appearance as well as structural integrity and other criteria.

- F. Bituminous materials shall not be placed on any soft grade, when the grade is wet, when the temperature of the surface on which the mixture is to be placed is below 45°F, above 95°F, or when other weather conditions would prevent proper paving of asphalt unless otherwise ordered or approved by the Engineer.
- G. All pavement markings shall be placed or restored by the Contractor under ideal conditions.

### **1.5 SOURCE QUALITY CONTROL**

- A. The asphalt plant shall be approved by the Engineer.
- B. All materials and the asphalt plant will be subject to inspections and tests by the Engineer and by the approved testing laboratory.
- C. Submit sieve analysis of each subbase material from each granular material source.
- D. Submit mill analysis of each grade of asphalt from each material source.

### **1.6 JOB-MIX FORMULA**

- A. No paving shall commence until a job-mix formula for each asphalt material to be placed has been submitted to and approved by the Engineer. The required job-mix formula shall be prepared by an approved testing laboratory and shall comply with the NYSS. Provide all testing as required to clearly show that materials meet specification requirements.
- B. If a previously-established job-mix formula is proposed, certified copies of the mix formula and all test reports made within the last six months by a recognized testing laboratory may be submitted. If the formula and test results comply with these specifications and sufficient evidence of compliance is submitted and is acceptable to the Engineer, a new job-mix formula will not be required. If insufficient data exists, the Engineer may request additional testing, or he may require a new job-mix formula.

### **1.7 SUBMITTALS**

- A. Proposed job-mix formula and certified materials tests as required under Paragraph 1.6 shall be submitted.
- B. Name, address and telephone number of the asphalt plant proposed for use and a certification that the proposed source conforms to the requirements of these specifications shall be submitted.
- C. Evidence shall be submitted indicating that all materials meet the necessary requirements as specified herein.
- D. Source quality control information as required in Section 1.5.
- E. Certified test reports on test required under Part 3 of this specification.

### **1.8 DELIVERY, STORAGE, AND HANDLING**

- A. Hauling equipment shall conform to NYSS. The Contractor is advised that length of haul, manner of haul, temperature of asphalt, and similar criteria, have a direct bearing on the quality and acceptability of the finished pavements. These other criteria shall be properly controlled such that the job mix of asphalt, when placed, is identical to that specified, approved, and as it left the asphalt plant. Segregation of aggregates, whether occasioned by hauling operations, improper mixing at the asphalt plant, or for other reasons, will result in rejection of the pavement. Clusters and pockets of aggregate in the finished pavement surface, with voids surrounding the aggregates, are unacceptable and will be rejected.

- B. Subbase granular materials shall be hauled, placed, and graded in a manner to assure good drainage, to preclude the inclusion of foreign matter and to preserve the gradation.
- C. Deliver all container materials in manufacturer's standard, unopened containers with labels legible and intact. Store and protect from damage, freezing, or sunlight and heat, if required of individual product.
- D. Store all materials and other items where damage and/or contamination will not occur.

## **1.9 JOB CONDITIONS**

- A. Asphalt top course shall be placed only during periods when the temperature and conditions are as specified in 1.4 F. Deviations from this time schedule shall be only as approved by the Engineer.
- B. Asphalt concrete pavement shall be installed upon previous courses which are clean, dry, and free from standing water, and only when weather conditions are suitable.
- C. Defective Pavement: Portions of the completed pavement which are defective in finish, compaction or elevation, or that do not comply in all respects with the requirements of the contract documents, shall be taken up, removed and replaced with suitable material, and properly installed in accordance with the contract documents.

## **PART 2 - PRODUCTS**

### **2.1 CRUSHED STONE BASE COURSE**

- A. The subbase course materials shall consist of granular materials as shown on the Contract Drawings and/or as specified in Section 02221. Depth as shown on the Contract Drawings.

### **2.2 BITUMINOUS PAVEMENT**

- A. Bituminous pavement shall be constructed with approved materials as stipulated in NYSS, Section 400. Job-mix formulas shall be formulated and submitted by the Contractor within the general limits imposed by Table 401-1 from the NYSS Section 401.
- B. A binder course shall be placed at a thickness as to produce a required completed thickness when well compacted with a ten (10) ton roller. The material shall be NYSDOT Type 3 Binder. Required completed thickness shall be as shown on the Contract Drawings.
- C. A wearing course shall be constructed on top of the binder course and shall produce the required completed thickness when well compacted with a ten (10) ton roller. The material shall be NYSDOT Type 7F Top. Required completed thickness shall be as shown on the Contract Drawings.
- D. Base course (where required) shall be placed at a thickness as to produce the required completed thickness when well compacted with a ten (10) ton roller. Base course shall be asphalt base Type 1, in accordance with NYSS Section 401. Required completed thickness shall be as shown on the Contract Drawings.
- E. Asphalt tack coat shall conform to NYSS material designation 702-90.
- F. Bituminous sealer shall conform to NYSS material designations 702-05 or 702-3401.

### **2.3 ASPHALT SIDEWALK (if required)**

- A. All materials shall be as used for bituminous paving except that they shall be placed to the thicknesses as shown on the contract drawings.



**2.4 MIXES**

- A. All bituminous concrete shall be mixed at the approved asphalt mixing plant in accordance with NYSS.

**2.5 GEOTEXTILE FABRIC (if required)**

- A. The geotextile fabric for pavement stabilization shall be American made Mirafi 500X as manufactured by Tencate Mirafi, FX-55 manufactured by Carthage Mills, or approved equal.

**2.6 PAVEMENT MARKING PAINT**

- A. Shall meet NYS DOT Item 727-01 white or yellow pavement marking paint where shown on the contract drawings, except that no glass beads are required.

**PART 3 - EXECUTION****3.1 GENERAL**

- A. Prior to the work of this section, verify that all utility, piping and grading work is complete, tested and approved by the Engineer and to the point where pavement installation may be properly performed. Particular attention is given to items such as pipelines or conduits so as to avoid excavating pavements at a later date.
- B. All work shall be performed in conformance with NYSS Section 402 or as otherwise specified or directed by the Engineer.
- C. Joints, where required, due to the discontinuation of work, shall be well bonded and sealed in such a manner as to create an integral appearance. Joints in successive courses shall be offset a minimum of two (2) feet horizontally from the lower pavement course. Transverse and longitudinal joints shall be performed in accordance with NYSS Section 402. Care shall be taken by workmen at all times to avoid walking on freshly spread material.
- D. Where, curbs, pavers, concrete sidewalk, manholes or other objects come in contact with the pavement, they shall receive a uniform coating of an asphalt tack coat. The asphalt coating shall be applied according to the manufacturer's recommendations but in no case shall it be applied above the elevation of the abutting asphalt materials.
- E. All asphalt material shall be placed in a uniform layer by an approved bituminous paver. Hand placement may be permitted in small irregularly shaped areas which are not accessible to a paver, only with prior Engineer approval.
- F. Each day's paving (binder or top) shall begin from a straight saw cut joint approved by the Engineer.
- G. Joints at existing pavements shall be vertically sawcut. Apply tack coat on surfaces as shown on joint detail of Contract Drawings before beginning placement of new material. New material surfaces shall match existing surface.

**3.2 SUBGRADE PREPARATION**

- A. Subgrade shall be prepared in accordance with Section 02000.
- B. The Engineer may require a field demonstration of compaction equipment before approving subgrade. Rolling and compacting shall be done in the longitudinal direction of the traffic flow. If the moisture content of the soil is outside of the limits required to achieve the required compaction

in accordance with Section 02250, the Engineer will require the addition of water or discing and regrading so that the required degree of compaction shall be achieved. Obtain Engineer's approval of subgrade prior to placing subbase course or geotextile fabric (if fabric is required).

### **3.3 SUBBASE COURSE INSTALLATION**

- A. The Contractor shall notify the Engineer at least three days before any subbase material is scheduled to be placed.
- B. Geotextile fabric (if required) shall be placed as specified previously.
- C. Subbase shall be placed to the thickness and limits as shown on the Contract Drawings.
- D. The accepted base material shall be placed with a maximum lift of 6" per course. Each course shall be compacted with a vibratory compactor capable of producing a minimum dynamic vibration force of 27,000 pounds.
- E. Compaction for driveways or roadways shall proceed in the longitudinal direction to traffic flow and be performed in accordance with NYSS Section 304. Compaction for parking areas shall commence on one side of an area and gradually proceed to the opposite side. When rolling has been completed in one direction, the rolling shall commence in a direction 90 degrees from the first rolling.
- F. After completion of rolling, no traffic shall be permitted over the compacted course and no hauling other than necessary for bringing material for next course will be allowed. Each compacted course shall be tested with a straight edge 16 feet in length and any depressions greater than 1/4 inch in depth shall be regraded until the depressions are corrected. The finished surface shall be smooth compact and dry.
- G. All voids in the top subbase course shall be removed by regrading and compacting to the satisfaction of the Engineer.
- H. Thickness tests and compaction tests shall be conducted on the subbase courses. The Contractor shall hand dig holes, not less than 3" in diameter through the subbase, at locations designated by the Engineer. The Engineer shall measure the thicknesses and if any deficiencies are found, they shall be corrected. These tests may be conducted on an average of one test every 200 feet.

### **3.4 BASE COURSE INSTALLATION (if required)**

- A. Asphalt concrete base course, as required by the Contract Documents, shall be placed to thicknesses and limits as shown on the Contract Drawings and only upon an Engineer approved subbase grade.
- B. Compact the base course as specified in NYSS Section 401. In areas where rollers are inaccessible, compaction shall be effected with hand tampers or gas-fired compactors weighing not less than 25 pounds and having a bearing area not greater than 48 square inches.
- C. Care shall be taken when rolling adjacent to a curb, sidewalk, light pole or other structure. Damage to any structure shall be repaired or replaced by the Contractor as ordered by the Engineer at no additional cost to the Owner.
- D. The surface shall be tested with a 16 foot straight edge and all variations exceeding 1/4 inch in height or depth shall be eliminated.

### **3.5 BINDER COURSE INSTALLATION**

- A. Asphalt binder shall be placed to the thickness and limits as shown on the Contract Drawings and only upon an Engineer approved subbase grade (where no base course) or approved base course.

- B. The roadway or sidewalk base surface to be covered shall be free from holes, depressions, bumps, waves, and corrugations. Any unsuitable surface areas or where directed by the Engineer shall be repaired by replacement of the unstable materials or by patching with a material to produce a tight surface having the correct grade. The roadway surface shall be cleaned by the use of mechanical sweepers, hand brooms, or other effective means until the surfaces are free of all material which might interfere with the bond between the overlay material and the existing surfaces. All cleaning equipment shall be approved by the Engineer prior to use. Cleaning shall continue until adequate cleaning results as determined by the Engineer. Cleaning shall be done immediately prior to overlaying at no additional cost to the Owner.
- C. Compact the binder course as specified in NYSS Section 401. In areas where rollers are inaccessible, compaction shall be effected with hand tampers or gas-fired compactors weighing not less than 25 pounds and having a bearing area not greater than 48 square inches.
- D. Care shall be taken when rolling adjacent to a curb, sidewalk, light pole or other structure. Damage to any structure shall be repaired or replaced by the Contractor as ordered by the Engineer at no additional cost to the Owner.
- E. The surface shall be tested with a 16 foot straight edge and all variations exceeding 1/4 inch in height or depth shall be eliminated.

### **3.6 TOP COURSE INSTALLATION**

- A. Asphalt top course shall be placed only during the periods indicated in Section 1.9 A.
- B. The roadway or sidewalk binder surface to be covered shall be free from holes, depressions, bumps, waves, and corrugations. Any unsuitable surface areas or where directed by the Engineer shall be repaired by replacement of the unstable materials or by patching with a material to produce a tight surface having the correct grade. The roadway surface shall be cleaned by the use of mechanical sweepers, hand brooms, or other effective means until the surfaces are free of all material which might interfere with the bond between the overlay material and the existing surfaces. All cleaning equipment shall be approved by the Engineer prior to use. Cleaning shall continue until adequate cleaning results as determined by the Engineer. Cleaning shall be done immediately prior to overlaying at no additional cost to the Owner.
- C. The Contractor shall coordinate the application of the upper courses for new and existing asphaltic pavements so that the finished surface of both top courses will be uniformly level. Any irregularities or depressions in the existing pavement shall be corrected by placing additional asphaltic concrete.
- D. Roll the asphalt top course with a minimum ten ton roller, or as specified by the NYSS.
- E. The finished pavement shall present a continuous and even appearance from edge of pavement to edge of pavement. The top course shall be blended in to meet existing pavements where applicable.
- F. The surface shall be tested with a 16 foot straight edge and all variations exceeding 1/4 inch in height or depth shall be eliminated.

### **3.7 MANHOLE CASTINGS AND OTHER APPURTENANCES**

- A. Manhole frames and covers, valve boxes, cleanout covers, catch basin frames and grates and dry well frames and grates shall be set so that the finished asphalt top course is 1/4 inch above each. In no case shall these frames and covers, boxes or grates protrude above the finish pavement surface. Likewise these appurtenances shall not sit in depressions nor be paved over. Prior to completion of finished pavement, all castings and appurtenances shall be protected from damage by the Contractor.

**3.8 GEOTEXTILE FABRIC (if required)**

- A. The pavement stabilizing fabric shall be placed over subgrade only after the subgrade has been reviewed and limits for fabric established by the Engineer.
- B. The fabric shall be unrolled over the designated subgrade area with a 24" overlap at fabric ends and allowing 12" overlap on sides. Prior to placement of subbase materials the fabric shall be pulled tight leaving no waves in the fabric.
- C. Subbase materials shall be placed on the fabric in such a manner that equipment does not come in contact with the fabric, the fabric remains in tension and no damage to the filter cloth from equipment or subbase materials occurs. All fabric placed shall be covered with fill the same day.
- D. Fabric which becomes damaged prior to covering shall be removed over its full width and replaced with new fabric, overlapping as stated above.

**3.9 PAVEMENT MARKINGS**

- A. The Contractor shall paint solid lines using two coats of paint in those areas indicated on the contract drawings and as, hereinafter, specified. Lines shall be painted immediately after all aspects of the paving operations have been completed and before dirt can accumulate on the pavement surface.
  - 1. Protection: Install adequate barricades at points where trespassing can occur immediately after paving is completed so as to prevent vehicles or pedestrians from impeding the painting, operation.
  - 2. Method: Carefully layout and define all painted lines on the surface of the pavement by means of chalk markings before painting, and accurately paint all lines within the limits and to the dimensions indicated on the contract drawings. All surfaces must be thoroughly cleaned before lines are painted.
  - 3. All lines shall be clear and distinct with sharply defined edges. Apply two coats of paint. At least 24 hours shall elapse between the painting of the first and second coats.
  - 4. Removal of Equipment: Upon completion of the painting operation and once the paint has dried, remove all barricades and other debris which has resulted from this operation.

**3.10 WARRANTY**

- A. Settlement: Any settlement exceeding 1/8" in 10' or 1/4" total depression, which occurs in any asphalt work within one year after final acceptance, shall be entirely removed and brought to proper grade and repaired, to the satisfaction of the Engineer.

END OF SECTION

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## SECTION 329200 – LAWNS AND GRASS

## PART 1 - GENERAL

**1.1 WORK OF THIS SECTION**

- A. Work covered by this section includes providing topsoil, seeding, sodding, fertilizer, liming (if required), and mulching all unpaved areas within the grading limits and restoring unpaved areas damaged or disturbed as a result of construction operations.
- B. Definitions
1. Grass Areas: Areas primarily used as lawns.
  2. Planted Areas: Areas primarily used as gardens and flower beds, and areas containing ornamental trees, plants, shrubbery, and hedges, and parks, and other areas established for aesthetic purposes.
  3. Wooded Areas: Areas containing dense growth of trees and shrubs.
  4. Open Areas: Areas consisting of fields, pastures, and other areas not defined as grass or planted areas.
  5. Paved Areas: Areas which are paved with gravel, asphalt, concrete, stone, or other paving materials which include, but are not limited to, roads, road shoulders, driveways, sidewalks, gutters, patios, recreational courts, railroad beds, and trails.

**1.2 RELATED WORK**

- A. Section 02000 - Excavation, Grading and Shoring
- B. Section 02221 - Pipe and Structure Backfill
- C. Section 02270 - Erosion Control

**1.3 QUALITY ASSURANCE**

- A. All work in conjunction with lawns and landscaping shall be performed under the direction of individuals experienced in the establishment of lawns and landscape plantings.
- B. The intent of this section is to provide lawns and landscaped areas of high quality. This section is, therefore, somewhat general in nature, in that the requirements specified herein are the minimum requirements necessary for lawns, sod, and ground cover.
- C. All materials shall meet or exceed the requirements of federal, state, and local laws and ordinances and shall conform to the standards of the Association of Official Agricultural Chemists.
- D. Material manufacturers and vendors shall be reputable, qualified firms regularly engaged in producing the type of material being supplied.
- E. Establish a good stand of grass of uniform color and density.
- F. Sod may be used in lieu of seed and shall be provided where specified, where shown on the Drawings, in areas where the establishment of grass may be difficult due to steep slopes or drainage flows, and where required to prevent erosion.
- G. Protect, maintain, and care for all grassed areas.

**1.4 SUBMITTALS**

- A. If lime is required, submit a lime label containing manufacturer's name, type of lime, weight, and guaranteed analysis.

- B. Proposed seed mixtures and manufacturer's recommended rate of application.
- C. Seed labels containing vendor's name, seed name, lot number, percentage of germination, percentage of purity, percentage of weed seed, and percentage of inerts.
- D. Fertilizer labels containing manufacturer's name, brand name, type, weight, and guaranteed analysis.

### **1.5 ENVIRONMENTAL REQUIREMENTS**

- A. Seeding and sodding shall be done during the following times and then only when conditions are satisfactory. Seeding: When the ground becomes workable in the spring to June 1 and between August 15 and October 1.

### **1.6 GUARANTEE**

- A. All work shall be guaranteed for a minimum of one year from the date of first acceptance of the work or from the date when Engineer determines that Contractor has established a good, vigorous, and healthy stand of grass of uniform color and density, whichever date is later. For sod, the guarantee period is until sod is fully knitted to a depth of one inch (1").
- B. During the guarantee period, replace all dead, unhealthy, or unsightly grass and sod. Also repair all damaged surfaces resulting from the defective grass or sod.
- C. Final acceptance will be given by Owner after established grassed and sodded areas have been in place for one year in a vigorous and healthy condition.

## **PART 2 - PRODUCTS**

### **2.1 TOPSOIL (see Section 02000)**

- A. Approved topsoil, obtained from excavation and grading work or, if insufficient material (either quantity and/or quality) is available, it shall be imported. All topsoil shall be 4 inches in depth.
- B. Store topsoil separately from all other excavated materials on the site and preserve for reuse or replace with 4 inches of imported topsoil meeting the requirements of Section 02000.
- C. Stocked or furnished topsoil shall be tested by an approved soil testing laboratory for determination of correct lime and fertilizer additives.

### **2.2 LIME (to be used to adjust pH to acceptable limits, see Section 02000)**

- A. Calcic or dolomitic ground limestone.
- B. Total carbonates - 85% minimum content.
- C. Magnesium oxide - 10% minimum content for dolomitic and high magnesium limes.
- D. Sieve Analysis - at least 95% passing the No. 8 sieve at least 40% passing the No. 100 sieve
- E. Coarser material may be used providing the rates of application are increased as approved by the Engineer.
- F. Packaging: New, clean, sealed, and properly labeled bags not exceeding 100 pounds each.

**2.3 FERTILIZER**

- A. Standard Commercial Grade: dry, free-flowing type suitable for common spreader application or finely-ground, water soluble type suitable for power sprayer application or granular pellet type suitable for application by blower equipment.
- B. Minimum content - 10% total nitrogen  
6% available phosphoric acid  
10% water-soluble potash
- C. Cyanamide compounds and hydrated lime are not permitted in fertilizer mixtures.
- D. Packaging: New, clean, sealed, and properly labeled bags not exceeding 100 pounds each.

**2.4 SEED MIXTURES**

- A. Grade A quality, fresh and recleaned, and proved to produce satisfactory growth in the locality of the project.
- B. In existing grass areas, mixtures shall be comparable to existing grasses and, when established, shall match as nearly as practicable the existing undisturbed grass.
- C. Seed Mix: Fresh, clean, from current season's crop, delivered in original packages, unopened, bearing guaranteed analysis. Seed shall meet New York State standards of germination and purity.
- D. Lawn seed mix shall be used when existing grass areas (lawns) are disturbed.

COMMON NAMES	Proportioned By Weight	Percent Purity	Percent Germination	Max. Weed Seed
Erosion Control Mixture Lawn Seed Mix				
Kentucky Bluegrass	45%	85%	80%	0.5%
Red or Chewings Fescue	35%	95%	80%	0.5%
Perennial Ryegrass (fine textured)	20%	85%	80%	0.5%

**2.5 SOD (if required)**

- A. Firm, dense, even textured and showing good root development. Grasses shall be of the type required for the intended use, suitable for the climatic conditions at the project site, and as approved by the Engineer.

**2.6 HAY AND STRAW MULCH (see Section 02270)****PART 3 - EXECUTION****3.1 INSPECTION**

- A. Verify that all underground and above ground work has been completed to the point where topsoiling, fertilizing, seeding (or sodding), and mulching operations may properly commence without unnecessary disturbances at a later date.
- B. Verify that seeding and sodding may be completed within the time limitations specified in Environmental Requirements.
- C. Do not commence work under this section until conditions are satisfactory.



**3.2 SPREADING TOPSOIL**

- A. In areas to be seeded, provide topsoil to a minimum compacted thickness of 4 inches. In the event that sufficient topsoil is not available from stripping the area to be excavated, the Contractor shall import enough additional topsoil to make up the deficit at no additional cost to the Owner.
- B. In areas to be sodded, provide topsoil to a minimum compacted thickness of 2 inches.
- C. Loosen all ground surfaces to a minimum depth of 2 inches to facilitate bonding of the topsoil to the subgrade. Use discs, spike-tooth harrows, or other approved means.
- D. Clean surface of subgrade of all stones, sticks, and rubbish larger than two inches in size and all litter and detrimental materials.
- E. Spread topsoil evenly on the prepared subgrade and lightly compact. Final surface grades shall be as shown on the Drawings and where not shown, the surface shall be graded to the elevations which previously existed and to afford positive drainage of all areas.
- F. Carry out spreading so that turfing operations can proceed with a minimum of soil preparation or tilling. Do not spread topsoil when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to the work in conformance with all legal requirements in a manner acceptable to the Engineer.
- G. After spreading, break up large, stiff clods and hard lumps, and rake off all stones and rocks larger than 1-inch in size, roots, litter, foreign matter, poisonous materials, and other materials which may be detrimental to the work. Dispose of all such materials off-site.
- H. Remove all topsoil spilled on sidewalks, driveways, and other surfaces for which topsoil is not specified or required.

**3.3 PREPARATION OF TOPSOIL**

- A. If the following conditions exist at the time of sowing seed or placing sod, fertilizing and liming, this paragraph may be omitted:
  - 1. Topsoil has been spread and raked clean within the past 10 days and is shaped to the required grade.
  - 2. Topsoil has been spread and raked and has been thoroughly loosened and worked to a depth of not less than 3 inches within the past 10 days and shaped to required grade.
  - 3. Topsoil spread more than 10 days ago but the top 3 inches is loose, friable, reasonable free from large clods, rocks, large roots, or other undesirable matter and shaped to the required grade.
- B. If any of the above conditions do not exist, then prepare the topsoil in accordance with the following paragraphs.
- C. Repair all eroded and damaged surfaces, cut or otherwise remove all weeds and grass and scarify or otherwise loosen topsoil to a depth of not less than 3 inches.
- D. Break up large, stiff clods and hard lumps, and rake off all stones and rocks larger than 1-inch in size, roots, litter, foreign matter, poisonous materials, and other materials which may be detrimental to the work. Dispose of all such materials off-site in conformance with all legal requirements and in a manner acceptable to the Engineer.
- E. Remove all topsoil spilled on sidewalks, driveways, and other surfaces for which topsoil is not specified or required.

**3.4 LIMING (used when required to adjust pH of topsoil)**

- A. Apply separately at the rate of 50 pounds/1,000 square feet, prior to fertilizing, seeding, and sodding. Lime may be applied dry by spreader or as an aqueous solution by spraying.
- B. After application, work lime into the top 3 inches of soil and redress surface to a smooth finish.

**3.5 FERTILIZING (DRY)**

- A. Uniformly spread fertilizer at the rate of 25 pounds/1,000 square feet with a cyclone or broadcasting type spreader.

**3.6 SEEDING (DRY)**

- A. Sow seed uniformly with a cyclone or broadcasting type spreader at a rate recommended by the seed vendor and as approved by the Engineer. The rate shall be based upon "new lawn" requirements and shall not be less than five pounds per 1,000 square feet.
- B. Sow seed when soils are moderately dry and when wind does not exceed five miles per hour.

**3.7 FERTILIZING AND SEEDING (WET - HYDROSEEDING)**

- A. Contractor may apply seed and fertilizer by spraying them in the form of an aqueous mixture.
- B. Equipment shall be of a type made specifically for this purpose and capable of maintaining a uniform mixture, even when not spraying.
- C. Water used shall be fresh water free from injurious chemicals and other toxic substances harmful to plant life.
- D. Use high pressure spray, directed upward so that the mixture will fall to the ground like rain in a uniform spray. Spraying which causes, or is likely to cause, damage to property or crops, erosion, or runoff is not permitted.
- E. Application rates shall be as specified in paragraphs 3.5 and 3.6.

**3.8 ROLLING**

- A. Dry Applications: Roll seeded surfaces after they have been properly covered.
- B. Wet Applications: Roll seeded surfaces if mulch is not used, and then only after soil has dried.
- C. Where rolling is required, compact soil lightly with a lawnroller, immediately after seed is sown.

**3.9 MULCHING - GENERAL**

- A. In seeded areas, use a mulch, matting, or a blanket to protect the seeding. Apply within 24 hours after the seeding operation is completed.
- B. In general, hay and straw mulching as described in Section 02270 is adequate and required for the protection of all seeding operations.
- C. On slopes steeper than 5 horizontal to 1 vertical, it is recommended to use mulching matting/blankets as described in Section 02270 for erosion control.
- D. The Contractor at his option, however, may use hay and straw mulching but is responsible for all seeding repair due to damage caused by slope erosion.

**3.10 SODDING (if required)**

- A. Sod may be used in lieu of seed and shall be provided where specified, where shown on the Drawings, in areas where the establishment of grass may be difficult due to steep slopes or drainage flows, and where required to prevent erosion.
- B. Sod shall be moist and placed on prepared surface with the edges in close contact. Stagger joints in adjoining rows and fill any gaps with sod plugs or topsoil.
- C. In ditches and swales, place sod with the longer dimension perpendicular to the flow of water. On slopes, starting at the bottom of the slope, place the sod with the longer dimension approximately parallel to the bottom of the slope.
- D. Water, roll, and tamp exposed edges of sod to give a smooth surface.
- E. On slopes subject to wash, and slopes steeper than 2:1, secure sod with wooden pegs driven at about 24 inches on center in each direction. Drive pegs through sod, perpendicular to the surface, so that the top of pegs are flush with the top of the sod.

**3.11 PROTECTION**

- A. Protect all turf areas by erecting temporary fences, barriers, signs and/or other devices to prevent trampling and damage. Also protect all turf areas from erosion, insects, diseases, and fungi.

**3.12 MAINTENANCE**

- A. Properly maintain all turfed areas by watering, cultivating, weeding, mowing, reseeding, filling eroded areas and all other repairs and replacements until final acceptance of the work.
- B. Reseed all areas where seed has failed to germinate and where seeded areas have been damaged by erosion, people, vehicular traffic or other causes.
- C. After sod has started to grow, resod any areas or portions failing to show life. Resod as often as necessary in order to establish a healthy, growing sod.

END OF SECTION